

Robert Silverberg • Connie Willis • Jeffrey Carver

Galileo

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Number Nine

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BOSTON IN 1980



The Committee for Boston in 1980 is bidding to hold the 1980 World Science Fiction Convention in Boston. The decision will be made very soon by the members of Iguanacon, the 1978 World Science Fiction Convention, which will be held during Labor Day weekend in Phoenix, Arizona. We urge you to join Iguanacon [\$7 to Iguanacon, PO Box 1072, Phoenix, AZ 85001] and to vote for Boston as the site of the 1980 Worldcon.

The Committee

We have a large and enthusiastic committee with lots of experience. All of us have worked on Boskones, the Boston regional science fiction convention, which draws as many as 1400 people each year. Our committee includes nine past Boskone chairmen and one past Worldcon chairman, and we have been actively bidding and working towards 1980 for five years.

The Facilities

Our hotel is the Sheraton-Boston, site of Noreascon, the 1971 Worldcon, and the last seven Boskones. The hotel staff know what an SF convention is like and they still welcome us back. The hotel has expanded since Noreascon, increasing the number of guest rooms to 1430 and adding more function space.

In addition to the Sheraton-Boston Hotel, we have reserved the connecting Hynes Auditorium which has an additional 120,000 sq. ft. of exhibit space and an auditorium seating over 5000.

The City

Our convention facilities are in the heart of Boston's Back Bay area surrounded by stores, a variety of restaurants, and convenient to public transportation. There is a 24-hour supermarket and a liquor store in the same complex with the hotel. Boston is a great city to visit and New England has many beautiful vacation areas.

The Committee for Boston in 1980

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Our Cover

Noted artist Jeff Jones presents us with his vision of a scene from Auf zwell Planeten by Kurd Lasswitz. Serially published in 1897, at about the same time as H.G. Wells's War of the Worlds, this famous "lost" classic tells a different version of the familiar story. A slightly larger rendering of this cover painting had been used by the Museum of Natural History's Hayden Planetarium in 1971 in an exhibit of Victorian Era Science Fiction scenes commissioned from Jeff Jones.

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 From bizarre to bizarre.

Editorial

Charles C. Ryan

development of alternate solutions to the same problems.

One need only look at what happened to the aerospace industry when the federal government curbed the manned space program to see what a shift in federal funding does to private R&D.

Another factor enters the picture when the amount of unidentified, or secret, R&D funding poured into the system by the Pentagon, CIA, NSA, and other covert agencies is taken into consideration. These funds are more often than not reflected in the private sector or university R&D and channeled through fronting organizations.

The availability of federal grants affects what fields have job openings, which branches of science students are trained in—what scholarships are available, and redirects the focus of independent researchers who find it easier to pursue the brass ring of a grant than to seek the answers to an unendorsed question. Government funding can also insidiously influence the results of research, since scientists are human and no one is enthusiastic about kicking the goose that lays golden eggs. The conflicting findings in marijuana studies conducted under the Nixon Administration are a case in point.

On top of setting the pace and direction of research, the government also influences basic and applied research through its legislative and regulatory agencies. At a fall meeting of the National Academy of Engineers, William O. Baker of Bell Laboratories, and Simon Ramo of TRW complained that antiquated, complex, often contradictory and counter-productive laws and regulations are seriously hampering initiative and innovation in R&D efforts. Private R&D efforts often find that more money has to be spent complying with these regulations than on actual research.

Neither the federal government nor private industry is spending an adequate proportion of funds in basic research. Instead, the major thrust is on development, or short term goals.

Historically, this has always been the case. More than 20 years ago, experts in the field accurately predicted the present, so-called, energy crisis. But nothing was done. Legislators, who only serve two- to six-year terms and bureaucrats who only react to emergencies after they've occurred aren't the ones who should be deciding where long term research, such as the space

program, should be on a list of priorities. Nor can private industry, which often has R&D budgets substantially larger than profit margins, maintain such long term efforts without a restructuring of existing tax laws, which squelch longer commitments to research. Stock holders must be kept happy and projects which don't produce results in a few short years are dumped.

Again, experts in the field are warning that the only solution to our present problems such as the depletion of natural resources, overcrowding, pollution, and energy shortages lies in the exploitation of space. If adequate steps aren't taken immediately, pessimistic projections such as the Club of Rome study could very well prove true by the turn of the century.

Yet, political and funding decisions are still being made on the basis of short term goals.

We must begin the colonization and exploitation of space now while we still possess the wherewithal to do so. We must intensify research and development and rewrite the regulations in this crucial area if we are to glean some accrued benefits by the year 2000.

The easiest path to totalitarian government lies through the ruin of economic and social collapse. Inadvertently, through monumental shortsightedness, or perhaps even deliberately, the present policies of our legislators and bureaucrats are swiftly carrying us into George Orwell's vision of the future.

The survival of this nation and the individual freedom it has cherished since its inception depend entirely on what happens now and in the next few years. If we do not take giant steps into space within that time, your grandchildren, maybe even your children, may never know what democracy means.

—G—

UNLESS THERE are some drastic changes in policy, this nation will not have an orbiting colony by 1984, nor is it likely there will be either a private or government colony by the year 2000. At the very moment when the scientific community is primed and ready to launch such a colonization effort, the spirit of scientific inquiry is entering a subtle version of the Dark Ages.

Rather than a frontal assault on space-going efforts, the government has chosen a more insidious method of curbing private ventures in that area through control of research and development funding.

To a much larger extent than is safe or desirable, the federal government dictates where research money is spent. With the federal government providing 51% of the \$45.2 billion in identifiable R&D expected to be spent this year, where it places that money largely determines where private industry will put the \$20.2 billion it is expected to spend.

Though experts in the field admit there are no available statistics to show how federal R&D efforts influence the private sector, it is undeniable such spinoffs occur. Many private corporations place their R&D efforts in research areas commissioned by federal grants in order to obtain matching funds, subsequent grants, or to end up with sub-contracting work.

Other firms, generally the smaller ones, are scared off by this concentration of funding and don't follow those particular avenues of research—which eliminates healthy competition and the

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Pro-File

Our Authors

CLOCKWISE FROM TOP LEFT
James P. Hogan, David Schow,
Connie Willis, Patrick Prentice

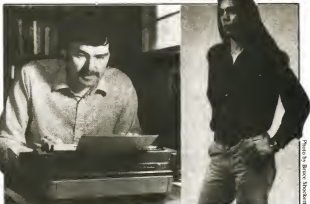


Photo by Bruce Stockert/Dana Va

F ICTION BY Connie Willis...
opinion by Robert Silverberg
...non-fiction by James P.
Hogan. We know you want to
hurry and start reading, but calm down.
We have some interesting background
here for you.

This issue's fiction features both new
faces and old friends. **Connie Willis** is
back after her highly successful screw-
ball comedy, "Capra Corn," in Issue
#7. In this issue, she appears with a
more serious effort, "Samaritan." This
story is in the new science fiction style,
with an emphasis on biology. Once you
read it, you might never be able to look
an orangutan in the eye again. Ms.
Willis lives in Connecticut with two cats
and a husband who is a physics teacher.
She is the mother of an eight-year-old,
and says one of her cats has but three
legs and the other "has impregnated
the entire neighborhood."

Our newcomers include **Patrick Prentice**
("A Few Minutes After Midnight
at the Oasis"). The answer to the
obvious question is, yes. The story was
inspired by Maria Muldaur's song of
approximately the same name; that,
and the notion (which fascinated Mr.
Prentice) that "the earth itself might be
a time machine." When he's not
producing sf, he writes TV scripts for
PBS. Otherwise, he says, he is proud of
his tennis, his jump shot, and his
spaghetti carbonara, and loves women,
God, music, and the NCAA basketball
tournament. Little remains, it seems,
but to say that "he always gave 100%:
he loved the animating spirit of the
universe above all else, and in the face
of dangers he was always serene..."

Another old friend is **Jeffrey Carver**
("What Kind of Gods Are These?"). A
full-time writer from Cambridge, Mas-
sachusetts, he has appeared in *Fiction*,
Fantasy & Science Fiction, and *Galaxy*.
His novels have been published by
Laser Books and Dell, and *Star Rigger's*
Way (this second) was picked up by the
Science Fiction Book Club. He is
currently working on a novel for Dell
under the title "Panglor." We feel a
propagandary interest in Mr. Carver here
at *Galileo*, because our sister magazine,
Fiction, published his first sale. Born
and raised in Ohio, he was educated in
New England, where he took a Master's
degree in Marine Affairs from the
University of Rhode Island.

"In the Idiom of the Old School" is,
according to **David Schow**, his "per-
sonal revenge on (his) share of sour

conventions." "Idiom" is the first
fiction sale of this 23-year-old, who
earns his living, like Jeffrey Carver,
solely from his writing; he regularly
writes a local film column and has sold
similar film criticism to *Cinefantastique*
and *Take One*. Soon, his contribution to
the upcoming *Encyclopedia of Fantasy*
will appear. Schow lives at present in
Tucson, but adds that he was born in
Marburg, Germany, and has since
"lived most places from Middlesex to
Huntington Beach." Outside of science
fiction, he says he likes movies, dogs,
most kinds of music, Dr. Pepper, and
"witty conversational adepts of either
sex."

When the manuscript for "Joy Ride"
first came into the office, a cover letter
from author **Christopher E. Blum** fell
out. It said about the story: "It is a tale

Authors

of escape from Des Moines, Iowa, something that almost all of us have attempted at one time or another." Mr. Blum is another full-time writer and he traces his interest in science fiction to "an early addition to lurid covers." He says he is quite serious about writing and that he was kicked out of the U.S. Army for wearing a disguise and calling himself "Electricity Man." He is a factory-trained BMW mechanic and claims to have the ability to tune motorcycles by mail. When we asked him about his major accomplishments, however, he skipped over that feat, preferring to indicate "astral projection, knuckle popping, and marathon running." He also claims to have once eaten six pounds of spaghetti. He is living in San Francisco and we take that as evidence that he made good his escape from Des Moines.

Our non-fiction department is following through with The Foundation project. This series is condensed from "Beyond Earth," author **Gary Hudson's** forthcoming book on the economics of space exploration and colonization.

Brian Fraser returns to *Galileo* in this issue with another of his fascinating interviews, this time with **Frederik Pohl**. Mr. Fraser's credentials as a science fiction researcher have been detailed at length in previous "Profiles." Once we gave him a faculty position at the University of Toronto, and he apparently didn't want it (he already teaches at the University of Ottawa) because he wrote us a little note to correct the error. And his integrity doesn't stop there. Nobody submits work in more professional style than Mr. Fraser. His manuscripts come in two versions: one straight typescript and one with a suggested layout for the magazine, complete with recommended placement of photos and illustrations. We have yet to find a typo or any other kind of error in his work. In an office which receives over a hundred manuscripts per week, he is a joy to work with.

The subject of Mr. Fraser's interview is **Frederik Pohl**. Mr. Pohl certainly needs no introduction to regular readers of science fiction. His novel, *Man Plus*, took a Nebula Award in 1976, and his latest book, *Gutaway*, is up for the Hugo this year. Those are just two of his many awards. He holds others for his writing and some for his editing as well. Until recently he was *editor* at Bantam Books. His distinguished career goes back as far as the 1930s, and some of his early experiences come out in this

interview.

We wind up the science with an article on super-cybernetics...linking the computer with the human mind. The odds that author **James P. Hogan** would ever end up in computer research must have been phenomenal at one time, considering the way he entered the field. He explains: "The British government offered approximately fifty awards for research and engineering, based on the results of open competitive examinations held throughout the UK. Because of certain foibles in the British educational system, I'd never studied any physics (a requisite subject). So I spent three weeks working from 8:00 a.m. in the local library and until midnight in the coffee bar next door after the library closed, self-teaching a three-year physics course. I ended up in the top ten out of approximately 800 applicants." Hogan went on to work in electronics development before he became fed up with watching oscilloscopes and he switched to computer sales.

Of course, we have opinion pieces in this issue. What would *Galileo* be without a little bit of criticism and a dash of heresy? If you want heresy, you go right to the source. So we are beginning a regular column on the science fiction scene by **Robert Silverberg**. Most readers will recognize him immediately as the editor of the annual anthology of bold, new fiction, *New Dimensions* (now in its ninth year). Others will know him as the author of dozens of novels and hundreds of stories, including "Nightwings" and the Nebula winner, *A Time of Changes*. Some readers will recognize him as the author of non-fiction books on pre-Columbian America and Medieval Africa. He also travels under the guises of noted book reviewer and sought-after toastmaster. There are few things for which he is not qualified to give opinions, but even on those few things his opinions are always interesting.

After a successful four-issue run with the novel *The Masters of Solitude*, co-author **Marvin Kaye** returns to *Galileo* with another first for us, a game review column. Mr. Kaye has been a toy-games trade editor (on and off) for about a decade. He has written a non-fiction book on the subject and is working on another. He intends to evaluate science fiction-oriented games with regard to quality of workmanship, novelty of theme, and the skill/luck ratio in play. He'll also relate the play

patterns to existing games and determine originality.

Gregory Benford is both a working scientist and a well-known sci-fi writer. His four novels include *If the Stars are Gods* and *In the Ocean of Night*, and among his many short stories, he numbers a Nebula Award winner (1975). As an Associate Professor of Physics at the University of California at Irvine, he studies plasma turbulence and the dynamics of relativistic electron beams. His science articles have appeared in *Natural History* and *Smithsonian* and he now appears in the pages of *Galileo* in our "Leaning Tower" column.

For those of you who were wondering about the fate of space hero Justin Case, he is back with the second installment of "Crosswhen." **Terry Lee**, the illustrator for our comic strip, comes from Kansas. He runs a camera and print shop during the day, but freelances illustration on his own, with a particular interest in science fiction. He used to follow "Flash Gordon" in the Topeka newspaper when he was a boy. Now he sees **Bern Hogarth** (who once did the "Tarzan" strip) as the most influential artist in his life, being particularly impressed by the anatomical dynamism of his work. Apparently, when **John Kessel** and **Terry Lee** work on a new episode for "Crosswhen," they get together for a brainstorming and develop ideas. Mr. Kessel then uses the best of these to produce a script from which Mr. Lee draws the actual panels.

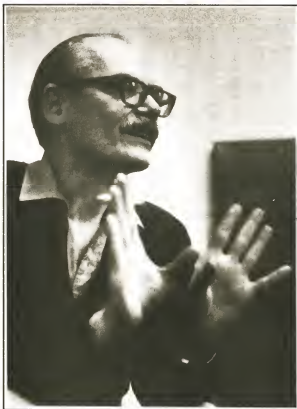
It's appropriate to have **Leslie Turek** write us a short item on the science fiction convention, what it is, what it does, and why this year they are calling the big one "Iggy." Ms. Turek is Chairman of the Boston in '80 Committee, an organization which devotes itself to the cause of bringing the World Con to you-know-where. She has long been active in the New England Science Fiction Association.

In this issue we have still another new columnist. **Murphy** has set himself the task of convincing you just how miserable life will be in the future. We thought he might be a welcome relief from all this Pollyanna stuff you've been reading in the papers. He calls his column "Doomsayer" and has agreed to write it irregularly, and won't do it on a schedule, either. A person of questionable parentage, he has no degrees (claiming an extensive education in the college of experience), loves

[Continued on page 15]

Interview: Frederik Pohl

Brian M. Fraser



FREDERIK POHL is a multiple winner of *sf* fan (Hugo) and professional SFWA writer (Nebula) awards as both a writer and editor. Most recently, he won the 1976 Nebula for his science fiction novel, *Man Plus*.

When interviewed, Mr. Pohl was *sf* editor at Bantam Books. He started off first as a science fiction fan in the 1930s, but he soon became a professional as a magazine editor, writer-collaborator and agent.

Brian M. Fraser is professor of a "Science Fiction in the Media" seminar at the Institute of Social Communications, Saint Paul University in Ottawa, Canada.

Fraser: Mr. Pohl, how did this transition from amateur to pro come

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about?

Pohl: Through hard work, and diligence. Most fans would like to be writers. I think this was even more true in the Thirties than it is today.

I think the impulse to write came before I was a fan. I began to read science fiction when I was about ten, trying to write it when I was about twelve. I didn't really get actively involved in fandom—there really wasn't any such thing as fandom, any clubs—until I was thirteen or fourteen.

Fraser: What other *sf* fans at the same time also became major figures in the science fiction field?

Pohl: A little later on, from about the age of thirteen until eighteen or nineteen, I was very active as a fan. I belonged to a number of clubs and wrote for fanzines, wrote letters to the

magazines and corresponded with fans all over the world. During that period, I met people like Donald Wollheim, John Michel, Robert W. Lowndes, Cyril Kornbluth, Isaac Asimov, Richard Wilson and a few others, most of whom became fairly successful as writers or editors, or both.

The organization we formed in 1937 or so was called the Futurians—which is the subject of a recent book by Damon Knight, who was also a Futurian a little later on. And about ten or fifteen members of it became fairly successful, or, like Isaac Asimov, incredibly successful as writers.

Fraser: How did you first become a science fiction editor?

Pohl: I fell into it. I had decided that writing was hard work. I thought of trying to be an agent, which seemed to

Interview

involve nothing except taking what writers did and giving it to editors. And, in the course of doing that, I made friends with an editor named Robert Erisman.

After I'd known him for awhile, I asked him if he'd care to hire an assistant. He said no, but he knew of a company where they were expanding and might be interested in hiring somebody. That was Popular Publications, so I went down there and told them what I would like. Much to my surprise, they hired me. They gave me two magazines to edit. I was nineteen years old at the time.

Fraser: What were the magazines?

Pohl: They were called *Astonishing Stories* and *Super Science Stories*. They lasted about three or four years, then the paper shortages of World War II killed them off. Also, by that time, I was in the Army.

Fraser: You were competing at that time with *Astounding* science fiction, which was the major publication in the field?

Pohl: I felt I was competing; John Campbell wasn't aware of it. He wasn't deeply concerned with any threat that I might have posed.

Fraser: What was the influence of John Campbell on science fiction?

Pohl: Campbell's influence was immense. He was the greatest editor science fiction has ever had.

He was a flaky individual; he had all sorts of peculiarities; he believed in things like Dianetics and something called the Dean Drive—which was a flat contradiction of Newton's Laws of Motion and doesn't work besides. But he thought that it did. And astrology and four or five other preposterous things.

He was also politically very strange and he had some good old-fashioned, New England attitudes about 'inferior peoples' of the Earth. But he was a great man all the same.

His attitudes were sort of prehistoric. I mean, he was a 'stone age' person in some ways. But I never knew his attitudes to affect the way he behaved to any individual.

He deplored the fact that some writers were unfortunate enough to have foreign names, like Isaac Asimov and Horace Gold and a few others. He urged them, wherever possible, to use pen-names so that the readers wouldn't be aware of it. But it didn't stop him in the least from working closely with them or being on close or intimate terms

with them.

Fraser: How did he work with writers, especially newer writers?

Pohl: Well, he didn't work very much with me at all. The period when John was editing *Astounding* and *Analog*, which I think ran 34 years, he never bought one story of mine.

He bought a few that I'd written in collaboration with other people but, much to my chagrin, when I sent him my own stories, he always sent them back.

Although, I must say in my own defense, that after I began writing rather frequently, I was being paid more by other magazines than he would have paid anyhow. So he was only seeing things that were rejected by somebody else.

Nevertheless, it rankled.

But the way he worked with most of his writers was to feed them ideas, to tell them what stories he thought should be written, what sorts of stories he thought readers would want to see.

He almost singlehandedly changed the whole complexion of science fiction.

I think that his basic concept was that *Astounding* should be the equivalent of a magazine of contemporary adventure published in the 25th Century. He didn't want to think in terms of "Gee Whiz. Wow! This is an invention, the first time this has ever happened, let's all get excited and reform the world."

He wanted stories about people dealing with the problems of changes in technology and science in some society in the future as they would seem important to the people at that time.

It was a very successful format and it aided in the acquisition of a lot of new talents to science fiction. Isaac Asimov was certainly one of John's proteges, although his first stories were published elsewhere—which was why he was allowed to use the name "Isaac Asimov". But John discovered, developed and published almost entirely people like Robert A. Heinlein, A.E. Van Vogt, L. Sprague de Camp, and maybe 20 or 30 others.

Fraser: Did the sf field lose a major writing talent when Campbell became a full-time editor?

Pohl: When John Campbell was writing, he wrote very well. But the first part of what he was writing was pure "space opera", was very derivative of Edward E. Smith's Skylark stories. The Lensman stories hadn't begun but certainly the Skylark stories were the model for this kind of high technology

space opera that John Campbell was writing, stories like "The Black Star Passes." They were good. But they were not anything that had not been done very well before.

Later on, mostly under the pseudonym of "Don A. Stuart", he wrote some quite poetic and moving stories about the distant future, the kinds of lives, the kinds of worlds that people may inhabit a thousand or more years in the future—very different from our own.

He also wrote some very exciting stories, closer in time and space, like "Who Goes There?", which is perhaps one of the three or four best-loved science fiction stories ever written. It's been re-printed God knows how many times. It was the basis for a rather inadequate movie called *The Thing from Outer Space*. The movie wasn't bad but it wasted the best parts of the story, it just didn't use them.

But I think that he probably would not have written a great deal more. Or, at least it's clear that what he did write after he became editor was pretty sparse and not nearly as good as the work he had been doing just before that. I don't know whether taking on the editorial job caused that or whether it was just that he was through with writing and wanted to deal with something else.

Fraser: During the war you began work on a novel about advertising?

Pohl: Yes. During the time I was in Italy—I spent a couple of years there as a weatherman with the Air Force—I began writing a novel about New York City because I was homesick. It seemed to me that the most exciting, sexy thing that was going on in New York was the advertising business. So the novel was based on the advertising business.

It wasn't science fiction. It was a contemporary novel called *For Some We Loved*. And it was really pretty ghastly-terrible, a bad hook in every way. I discovered that after a few years and burned it. One whole night, I stayed up, in a summer place we had at the time with a big fireplace, reading it and throwing it page-by-page into the fire as I finished.

But before I came to that realization, when the war was over I had looked at the novel and decided that at least one thing wrong with it was that I didn't know anything about advertising. So I looked in the *Sunday Times* in the Help Wanted section and saw a couple of people advertising for advertising agency copywriters. I applied to three of them and one hired me.

With Harlan, one never knows when one is going to get the manuscript. But it should be coming in in a couple of weeks. . . It'll be out sometime next year, I hope, God willing—Harlan willing.

I spent the next three, almost four, years in advertising, writing copy and later on running entire mailings and space ad campaigns for *Popular Science*. I've forgotten what my title was, but I was basically in charge of large sections of the advertising for the book and circulation drives.

Fraser: What was the agency's name and what kind of accounts did you work on?

Pohl: The first agency I worked for was Twing & Altman and our accounts were primarily book accounts, like the Dollar Book Club, the Literary Guild and several How-To-Do-It publishers like William H. Wise, and I don't know what-all else. There were other accounts but the bulk of the clients were in publishing. We had some gardening thing, I remember. I didn't know a great deal about it and didn't contribute much to it.

But I spent some time there learning the craft. It turned out not to be dissimilar from writing the house ads and the blurbs for pulp magazines. The way that you advertise in a pulp magazine is to find the most provocative and exciting and sexy parts of it and write a house ad. And that's the way you advertise a Book Club book, too and it seemed to work out pretty well.

As a result of having spent this time in the advertising business, I then figured I knew quite a lot about it. But the novel I had originally planned to use was unuseable so I decided to try it as a science fiction novel.

Over a period of a year or so, I wrote about 20,000 words of the beginning of it and showed it to Horace Gold, who was then the editor of *Galaxy*. He said he'd love to publish it but he'd need the second and third installments as well as the first.

I asked Cyril Kornbluth if he'd like to collaborate on it and so he wrote most of the next third of it. And we jointly wrote the final third.

It was published in *Galaxy* as "Gravy Planet" and in book form a little later as *The Space Merchants*. And I guess it's about the most successful novel I've had

anything to do with—so far at any rate.

Fraser: What was the reaction of the advertising community at the time it came out?

Pohl: Mostly favourable. They winced a little bit because it's satirical and it does poke fun at advertising. But I thought it was rather noble of publications like *Advertising Age* to speak highly of it since it was jabbing at advertising itself. They gave it a pretty favourable review.

Most of the people in the business who I knew thought it was pretty funny, but on-target.

Of course it's 25 years old now; the world is not quite the same as it was then. But large parts of it are still relevant today.

Fraser: In the Fifties, you worked as a literary agent. What was your modus operandi and who did you work with?

Pohl: Well, I got into it more or less by accident. I had been helping a friend of mine, Dick Wyllie, set up as a literary agent. He was wounded in World War II—not actually wounded but he injured his back during the Battle of the Bulge—and he couldn't hold a full-time job.

So I helped him set up a literary agency. He became more ill and finally died. By that time, I was enmeshed in it so I continued it myself.

My clients included Isaac Asimov, Robert Sheckley, Cyril Kornbluth, John Wyndham, Clifford Simak, Jack Williamson, Fritz Leiber—everybody who was anybody. Of the 100 best science fiction writers in the world at that time, I think I represented at least 50 or 60.

Science fiction was growing, so, so was the agency.

But nobody loves an agent. And besides, I have absolutely no business acumen whatsoever. Running a literary agency is conspicuously cheap, it requires very little capital and not much overhead. Yet I managed to lose my shirt.

Fraser: In the early '50s, two new sf magazines were started which are still in the field. What was the origin of *Galaxy*?

Pohl: *Galaxy* began as an attempt to

diversify by an Italian publisher. He had made quite a lot of money in Italy with a thing that looked sort of like a comic book but the text was more like *Confessions*. They were called "romance comics."

They had succeeded so greatly in Italy that he thought he could capture the whole world with the same sort of project. So he opened a company in New York to publish this magazine.

And it occurred to him that he could save money by having three or four other magazines. He found someone to edit some sort of women's magazine and, as an afterthought, someone suggested "why not try a science fiction magazine?"

So they found Horace Gold to edit it. It became *Galaxy*. And is still alive today, some 27 years later, whereas the magazines they started with were down-the-tubes in just six months. They were just bad ideas which never worked out.

Fantasy & Science Fiction began almost the same way, just at about the same time. I think *F&SF* was actually a few months earlier. I think it was *Ellery Queen's Mystery Magazine* which was finding it difficult to deal with its overhead problems with only one real magazine. So they decided to increase and diversify a little bit and they asked Tony Boucher and Mick McComas to put out one issue of a publication called *The Magazine of Fantasy*—just as a one-shot experiment.

It worked well enough that they tried again and made it quarterly, then bimonthly, then changed the title to *Fantasy and Science Fiction*. It has also survived 27 years or so.

Fraser: What was H.L. Gold like as an editor?

Pohl: Horace Gold was one of my closest friends and one of the best editors I ever worked with. He didn't do as much to change science fiction as John Campbell did, but he put out a superb magazine. He had very good taste and he was indefatigable.

He was infuriating to work with. He had a mania for perfection and no writer ever came up to it. He never came up to

it.

It's easy to imagine a story in your mind and to have it be impeccable, every word pointed and beautiful. It never happens on paper. But Horace never stopped trying, and dealing with him was an ordeal.

You'd show him a story and he'd say, "Yes, yes, it's OK but you've missed the point of your own story. This should be what you know before you begin to write it. And what you should write would be what comes after this," or something like that. Which may be marvellous advice to give, or a nice thing for a literary critic to say, but it's not an awful lot of help to some writer who needs to sell a story and who has 10,000 words on paper that Horace wants you to throw away.

He was demanding, and overbearing, and hard to get along with. But the stories that came out of the conflict between Horace and his writers were generally a lot better than they would have been without him.

I think that *Galaxy* in the mid-50s was the class of the field. John Campbell had "in" and "out" years. There were times when he was just bored with being an editor. And it showed. During those years, *Galaxy* was incontestably the most exciting place to be. *Fantasy & Science Fiction* published some marvellous stuff but they weren't as innovative or daring or experimental as *Galaxy* was. Horace was taking all sorts of chances.

Fraser: What kinds of stories did *F&SF* and its editors accept?

Pohl: They published a lot of what I like to think of as "little old lady" stories.

They were stories that were gentle and sweet. And you felt good while you were reading them. But, twenty minutes later, you wanted to read something else. They didn't leave much of an impression. Horace's stories were much more powerful and exciting and provocative.

What *F&SF* had going for them was a very high standard of literary excellence. The graceful style and the appropriate word were important to them, as they have not been to all science fiction writers and editors and magazines. I think that they did a lot to make science fiction respectable with the literary establishment—which may or may not be a good thing.

Fraser: How did your story "Midair Plague" originate?

Pohl: It was one of the two stories in my life that somebody gave me. Horace gave me the story. He said, "Why don't you write a story about the future in which the problem is not scarcity but too much abundance, when what you need people to do is to consume more?"

And I said, "Horace, that's a crazy idea. It wouldn't work. It would never happen."

But he kept after me. I have said that he was remorseless. He tried the idea on six or eight other writers, all of whom laughed in his face. After about a year, he finally broke me down and I figured out a way in which I could write it so that it would at least seem to be superficially plausible.

And it has been, I think, more reprinted than any other story I ever wrote. In fact, this morning, I had a cheque for \$200 from somebody for

reprinting it, quite to my surprise, I had forgotten about it. I don't know how many times it's been reprinted or how many languages it has been in, but I suppose there are about ten million or more copies of it floating around, one place or another.

Fraser: How did you work as an editor for *Galaxy*, with writers like Robert A. Heinlein?

Pohl: With Heinlein, I worked at arm's length. Bob Heinlein is a skillful and highly idiosyncratic person. He knows what he's doing and we got along very well as long as I didn't interfere with what he was doing.

On the one occasion where I edited a story of his quite heavily, he got pretty upset about it. It's a story called *Farnham's Freehold*. In the book version of it, on the copyright page, you will find a little notice that says "a previous version of this story in *Worlds of If* was heavily edited by Fred Pohl and is not at all what I intended", or words to that effect.

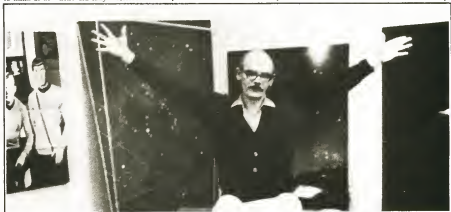
And he was quite justified in doing it. The reason it happened was that there was confusion. I had asked his agent if it was all right for me to edit it, to cut it. And I had understood him to say that it was.

But apparently someone had forgotten to tell Bob Heinlein about this. He didn't know that it was going to happen so he was justifiably upset.

Fraser: You were editing it for length, primarily?

Pohl: I was editing it for length. I also thought parts of it were tedious.

Bob Heinlein is the epitome of the science fiction writer. He does every-



thing that any science fiction writer does. And he did it first.

I read everything he has written with great pleasure—No—I read everything he has written with great anticipation and great satisfaction, not always with great pleasure. There are some of his stories I have not really particularly liked. Most of them I like and some of them I love. And, whatever, whether they're good or bad, I want to read them because I want to see what Bob Heinlein's doing.

But, in *Farnham's Freehold*, there were patches of what seemed to me to be Heinlein's worse self, when he seemed to be quite preachy and nothing much was happening. I cut a lot of them out.

Fraser: In your role as a magazine editor, how did you work with newer writers like Larry Niven?

Pohl: Larry Niven was one of the writers I published first in *If* magazine. I had a policy of publishing one story each issue by someone who'd never had a story published professionally before. And Larry came along with a story called "The Coldest Place", totally unknown to me, just out of the slushpile.

But I liked the story and I bought it, then I bought another one and I bought another one. They got better and better as he went along.

I worked quite closely with him for awhile, suggesting ideas to him from time to time, encouraging him to go in one direction rather than another. He was a good person to work with.

The reason I stopped was only that I left *Galaxy*. I published Larry's first story about 1966 and I left *Galaxy* three years later. I think in those three years, I published almost everything he wrote.

Fraser: As science fiction editor for Bantam Books, what is in-the-works?

Pohl: Well, we have a couple of major books coming up.

We have a book called *Harlan's World*, which is a collection of stories laid on a mythical planet invented by four people for the amusement of Harlan Ellison. It began as a lecture series at UCLA a year ago. And the people involved in it are: Frank Herbert, Kate Wilhelm, Poul Anderson, Larry Niven, myself, and three or four others including Thomas Disch, Ted Sturgeon—a really pretty good cast of characters. We added it up once, and among the contributors are something like 37 Hugos, 22 Nebulas, and God knows how many other awards.

That's going to be a good book.



Fraser: When will that be out?

Pohl: I'm not quite sure. With Harlan, one never knows when one is going to get the manuscript. But it should be coming in in a couple of weeks. The question then is whether we will have a hardcover edition or whether we'll go directly into paper. But, in one edition or another, it'll be out sometime next year (in 1978), I hope, God willing—Harlan willing.

We have a novel by I think the best science fiction writers in the Soviet Union, two brothers named Boris and Arkady Strugatsky, called *Snail on the Slope*.

For a novel by Gordon Dickson called *Time Storm*, which is just out in hardcover, we'll have our paperback out in seven or eight months.

Fraser: You also have a book by Robert Shekley?

Pohl: You have a Shekley novel. I'm not quite sure what the title's going to be because it's been changed several times. But it's his first real novel in a good 12 or 15 years, I don't know how long.

He did publish a novel, or something that seemed to be a novel, in between but that was one of those experimental things I was talking about and I'm not quite sure it should be called a novel. It had brilliant stuff in it but it left me a little unsatisfied.

This is a conventional novel. It has a beginning, a middle, and an end, a plot and characters, and all those things that I like a lot.

Shekley is one of my favourite satirical writers and this is pretty funny.

Fraser: What was the problem with the original title?

Pohl: The original title was "The Humours," which doesn't seem to say anything. The next title was "The Alchemical Marriage of Sylvester McFloyd," or some such thing. And that didn't seem to say much either.

We're battling around possible titles without yet having come up with one.

Fraser: In terms of your own writing, how did you employ different narrative techniques in your novel *Gateway*?

Pohl: I wrote *Gateway* in patches and fragments. I'm not quite sure how I did it because I didn't formulate a plan and then do it that way. I wrote things as they occurred to me as being interesting and then I tried to see how I could piece them together into the book.

I'm not quite sure that it's a good way to write. It's pretty time-consuming. I probably could have produced an

equivalent amount of wordage in about a quarter of the time if I had gone straight through. But I'm not sure I would have liked it as well.

I must candidly say that I'm in love with *Gateway*. I think it's the best book I ever wrote by far and anybody who doesn't is going to have to fight me.

Fraser: What writing is coming up from you?

Pohl: Well, I have a novel in collaboration with Jack Williamson called "Wall Around a Star," which I hope to have out from Del Rey Books in the latter part of 1978.

Del Rey Books will be publishing my autobiography, which is called "The Way Tomorrow Was"—unless we change that title, too. That should be out in the summer of 1978.

I have another novel for St. Martin's Press, tentatively called "The Invisible Men," which I'm now just finishing and which, hopefully, will be in print either late '78 or early in '79.

And I've signed a three-book contract—I've signed a lot of contracts—but those are the ones that are real enough to talk about.

Fraser: Is it true that you also have a sequel to *Gateway* coming up?

Pohl: Yes, one of the contracts is for a sequel to *Gateway*. But I have not even begun to write it.

Fraser: How do you discipline yourself to write?

Pohl: With great difficulty.

I sit down at the typewriter and stare at it. I produce four pages a day, every day. Sometimes, it's good, sometimes, not. More often, I guess, not. I waste a lot of wordage that I write out and don't really like and change substantially before I print it.

If I don't do that, if I miss a day or two, it gets harder and harder to get back "on-the-wagon" and do it some more. So, every day, I sit right there and hit those keys until four pages have come out of it.

Fraser: Are you one of your harshest critics?

Pohl: Oh, no. No, I have some pretty harsh critics.

I get bored easily. And if I'm bored, I stop writing. If I don't find some way of re-awakening my interest in it, then I never publish whatever it is.

I have one four-drawer filing cabinet full of fragments and even completed books that are not going to be published until or unless I think of some way of making them better than they are. I've bought back contracts on books at least

ten times—even when I couldn't afford it—because I couldn't bear the idea of publishing them.

Fraser: Is your writing a kind of self-therapy?

Pohl: Well, writing is what keeps writers from going right up-the-wall. It's the best therapy there is. It relieves all your tensions, adds some new ones, solves many problems and creates some new ones. But writing is better than couch-time.

Fraser: Why do you write science fiction, as opposed to other genres?

Pohl: I enjoy reading it and I enjoy writing it.

Arthur Clarke was asked why he wrote science fiction and he said: "Because it's the only literature that concerns itself with reality." If he hadn't said it, I would, because it's true.

The reality most urgent for all of us now is change. And science fiction is the literature of change. Every other kind of literature seems to take for granted that the world is static and predetermined, that it's going to be this way indefinitely. Science fiction shows the ways in which it will be quite different.

Fraser: Is the purpose of science fiction in some ways to propagandize science, such as space travel?

Pohl: No. I don't think you can speak of science fiction in terms of purpose. I think science fiction is an amorphous body of literature, poorly-defined, and including some real ghastly messes as well as some beautiful work. I don't think that it can be said to have a purpose.

A lot of science fiction does, in fact, propagandize science. But that's not what it's all about.

It shows what can be. Science fiction is a sort of distant early warning system, letting you know what's going to happen or what might exist some other place in the Universe.

And to the extent that it has a purpose, I guess its purpose is to display these things. But I don't like to think of it in those terms, I like to think of it in terms of being a process, a way of thinking about reality and about change.

Fraser: Is this the purpose of your own science fiction writing?

Pohl: I guess the purpose of my science fiction writing is therapy. I write it because I want to. The great good thing of my life is that I don't do anything I don't want to, and people are kind enough to give me money for it. —G—

Opinion

Robert Silverberg



THESE ARE odd and interesting times for baseball players, tax collectors, and science fiction writers. All are pulling in a lot more revenue than they used to. The tax collectors are benefiting from inflation—as people earn more, they glide upward into bigger-biting tax brackets, with the curious result that they pay a greater proportion of their income in taxes than before, though their real purchasing power hasn't improved at all. Baseball players are cashing in on the breakdown of the traditional contract system, which used to hold them in a kind of permanent servitude; now that they have a way of making themselves free to sell themselves to the highest bidder, they're extracting quite phenomenal salaries, and mediocre athletes find themselves collecting salaries five times as great as those paid to Ted Williams or Willie Mays in their prime. And science fiction writers? For the first time, it's possible for the professional sf writer to earn a living, a good one indeed, writing nothing but sf.

Oh, there always were a few who did it—Heinlein, Poul Anderson, Van Vogt, Gordon Dickson. Asimov, though he writes all sorts of things, has earned enough from his sf alone to support himself comfortably over the years. At any given time there would usually be five or ten writers enjoying a decent five-figure income while writing sf primarily or exclusively. But at any given time there would usually be three or four hundred sf writers.

The ones who had thriving bank accounts were generally those who by

dint of long service and fertile imaginations had won large followings over many years (Heinlein, Van Vogt, Asimov) or those who had in a disciplined way turned out dozens of books (Anderson, Silverberg, Pohl, Dickson) or those who had written One Big Book that established itself as a basic item (Frank Herbert, Walter Miller). Most of the others tended to get along just above the poverty line, and that includes some Hall of Fame stalwarts and some multiple Hugo winners. The economics of science fiction, like the economics of baseball, didn't allow for much of an income for many people. In a field where magazines sell 40,000 to 75,000 copies an issue, where paperback sales are often in the same range, where a hardcover book is doing well if it sells 6,000 copies, you don't find many millionaires.

But now—ah, but now!

Even allowing for the lessened value of the dollar, the financial returns for today's science fiction pros are astonishing by comparison with those of just a few years ago. Advances for paperback novels were running from \$1500 to about \$5000 circa 1972, with the \$5000 checks going to the very biggest names. Now I routinely hear of deals in the \$15,000 and \$20,000 range for writers who hadn't even sold their first stories in 1972. Better-known folk command two and three times as much. Of course, not everybody is cashing in with equal ease: the top pros are writing their own tickets, and so, curiously, are the best of the talented beginners, especially if they happen to be women, but a number of middle-rank veterans are looking on

in confusion and mounting anger as the big money passes them by. Still, even they are able to draw \$7500 to \$10,000 for a novel. When you add in the increasingly lucrative foreign market (\$2500 for British rights, say, \$1500 in France, \$500 in Italy, \$1250 in Japan—it mounts up!), you can see that it's possible to earn as much as a middle-management executive by writing one sf novel a year and a handful of short stories.

There are two reasons for this, one obvious and one not. The obvious one is that sf is vastly more popular than it used to be, and I don't just mean *Star Wars* and *Star Trek*. What was, twenty years ago, a funny little category of paperbacks tucked away down there between the westerns and the nurse novels is now out front in the bookstore, and people head for it first. The average sale of the average mass-produced sf paperback is probably still only in the 40,000-copy range, maybe even less, but the number of books going over the 100,000-copy range is enormous and growing all the time. Bigger sales obviously mean bigger royalties for writers.

The other, and more subtle, factor is the change in the cover price of books. In 1956, sf paperbacks, such as there were then, sold for \$.35 and sometimes \$.50. Today they're \$1.75 and up. That's about a 400% increase. My own *Book of Skulls*, which happens to be at my desk as I write this, bears a \$.95 price tag for its 1972 edition and \$1.50 for the 1976 one; when it comes out again in 1979 it'll sell for \$1.95, I imagine, maybe even more. That's

100% inflation in seven years. *Authors' paperback earnings are a function of the cover price.* I earned about \$5.06 on each of those 1972 copies of *Book of Skulls*. I'll get about \$1.12 on each copy sold next year. If sales remain constant, as they have, and paperback prices inflate faster than the general rate of inflation, as they have, then the writer is way ahead of where he was a few years ago. And he is.

One effect of this is to create a large new class of full-time science fiction writers. James Blish and Algis Budrys worked for public-relations firms to keep the rent paid between books. Alfie Bester was an editor at *Holiday*. Cliff Simak is a newspaperman who writes in his spare time. Writers like Fritz Leiber, Wilson Tucker, Frank Herbert, and Poul Anderson held part-time or even full-time jobs before they felt able to take the plunge into free-lance writing. The Ellison or the Silverberg who set up shop as a professional writer when he was barely old enough to vote, and made a go of it, was a rarity. Not any more. If a talented 23-year-old can earn \$15,000 or more by selling a novel and a couple of short stories, what sense is there in looking for a real-world job?

I am not, repeat *not*, in any way objecting to the sudden prosperity that has engulfed nearly all science fiction writers, myself included. But I do feel some qualms about the ease with which young writers can make themselves self-supporting these days. I know beyond doubt that I was injured as a writer by having things too easy in my twenties, and I think Ellison was some time in recovering from his own early success. Maybe the best science fiction really is written by part-time writers. I mean to explore that notion and some others next time, as I continue this discussion of the strange and wonderful world of the sf professional on the threshold of the 1980s.

—G—

PRO-FILE [Continued from page 7]
nothing, and spent his childhood in a cage. He likes the sight of blood, the soft sound of whimpers, the smell of decay, and the feel of uneasiness. He lives in Cleveland, where he is employed as the night manager of an abattoir and works by day as Assistant Embalmer and part-time gravedigger for the Easy-Go Funeral Home. Glad to have you with us, Murphy. But do you think you could get a bath before you bring in the next installment?

—G—

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Think Of A Number

James P. Hogan

I REMEMBER reading, some time ago, a story featuring one of those fantastic interstellar spacehips that could flip itself from one end of the galaxy to the other in the wink of an eye by engaging its 'hyper-drive', or whichever variant of that theme it employed. That kind of concept, of course, is nothing new to sf readers, but even so the advancement in physics and technology that it implies is surely mind-boggling.

And yet it had the pilot, sitting at his depressingly 747-like control panel, feeding paper tape into his computer!

That was the point at which I tossed the book aside with a sigh and began searching around for something more inspired and, hopefully, more inspiring.

As just about everybody knows, computers have made stupendous advances over the last thirty years in terms of the amount of information they can store and the speed with which they can process it. During the course of its several hundred million years of evolution from crude networks of nervous tissue, the human brain hasn't done so badly, either. Together they ought to make a powerful and formidable team, with the strengths and weaknesses of one neatly complementing those of the other.

But to get them working effectively together, we need a better method of communication between the two. The human brain is super-fast at formulating problems and the computer hyper-super-fast at solving them in comparison to the time needed to encode the questions into machine-intelligible form and get the answers back again. When

you think about it, the routine of typing the steps of a program into the machine on some kind of keyboard, and of reading the output back from a screen or hard-copy printout is rather like playing a game of chess by mail; the amount of time spent communicating the 'moves' back and forth is astronomical compared to that needed to perform the operations at either end—even ignoring the time needed to prepare the program in the first place, which is sometimes measured in many man-years of effort.

Admittedly, computer Input/Output techniques have improved enormously since the patchcord panels and binary listings of the mid-1940's. Today we have video-terminals, graphics displays, light-pens and voice-recognition, but all of these are merely specialized devices for carrying information between the brain and the outside world through the same channels that people have employed for as long as people have existed—the senses and the muscular system.

This is perfectly understandable, since people have never had any better ways of communicating even between each other. They've never really been satisfied with this state of affairs—the search for ESP etc. continues unabated despite nothing remotely resembling tangible evidence of such phenomena having been turned up yet—but they're stuck with it. It comes as no surprise therefore to note that today's methods of communicating with machines leave much to be desired—especially when machines are never at their best when they're trying to talk like people in the



first place.

So, if direct mind-to-mind links seem to be out, how about a direct link between mind and machine? After all, machines have enabled us to fly through the air at will, observe events in distant places as they happen, speak to anybody anywhere, and perform countless other feats routinely which our ancestors of only a few centuries ago could only have conceived of as magic. So why shouldn't machines provide the answer to making the final remnants of medieval magic come true too—telepathy, telekinesis, mind-over-matter and all that stuff?

Fantastic?

I thought so too until I spoke with Dr. Lawrence Pinneo recently in his lab in California, and learned that, in terms of crude beginnings anyway, it's already

happening! Dr. Pinneo has demonstrated a computer setup, using a standard commercial machine, in which the operator only had to think what he wants the machine to do, and the machine does it. The system makes use of the discovery that the act of articulating a word, or indeed even concentrating on the word, gives rise to unique electrical patterns in certain brain-centers associated with speech. These patterns are detected by conventional EEG (electroencephalographic) techniques and fed as electrical signals into the computer, which matches them against sets of previously stored "templates", selects the set that fits, and then executes a pre-defined operation according to the particular set (word) identified.

In the case of Dr. Pinneo's experi-

mental system, the outputs from the computer were used to control the movements of a TV camera. The system's vocabulary comprised seven commands—right, left, up, down, near, far, and stop. Not a lot, one might say, but if this is thought of as the first cave-man-grunt stage of a complex language, the future possibilities could be staggering.

It all began around ten years ago while Dr. Pinneo was at the Delta Regional Primate Research Center, Tulane University. One aspect of the research being conducted there concerned the artificial stimulation of brain centers via surgically implanted micro-electrodes, primarily in cats, chimps, and squirrel monkeys.

One remarkable result of these investigations was that an action could

be elicited by stimulating a single point within the brain. The raising of a forelimb, for example, requires the co-ordinated operation of thirty or so muscles, yet a single electrode in the right place is sufficient to trigger the complete movement. It suggests that the elements of basic motor actions which go together to produce more complex consciously controlled movements are reflected in 'hard-wired' routines—'microprograms'—that have become established in the course of brain evolution.

This certainly makes sense. If we were obliged to monitor and consciously control every operation of the scores of muscles involved in each action, we would never have evolved to our present level.

If complex movements are made up from sequences of microprogrammed elements, could such a higher-level movement be mimicked by artificially triggering the microprograms in the appropriate sequence? If so, it ought to follow that a whole repertoire of movements could be obtained by simply altering the sequence in which the microprograms were activated, i.e. by changing the 'program'. Such techniques might, for example, enable victims of certain kinds of paralysis to regain effective control of their limbs to a considerable degree. By the early 1970s, Dr. Pinneo was continuing this line of study, together with colleagues, at the Stanford Research Institute in California.

The project was hitting problems. Effective results required about 60 electrodes to be implanted. Now these are extremely small, but even if the utmost care is taken in surgery, the implanting of 60 of them invariably causes some damage to neural tissue. Further progress would have necessitated the stimulation of even more nerve centers.

Could some method be devised by which a brain center could be excited remotely—without physically invading the skull at all? To give an analogy of the kind of thing envisaged, a standard method of treating some classes of cancer tumor is Radiation Therapy. A number of thin beams of gamma rays or X-rays converge on the tumor from different directions so that the radiation dose received by the tumor is high, but the surrounding tissue remains unharmed. Could a similar principle be employed to stimulate selected points in the brain?

To ensure that only the desired function be activated, without inadvertently stimulating other neuron groups adjacent to the target centers, focusing would have to be within a volume less than one-third of a millimeter across.

Several forms of energy that might readily penetrate the head suggested themselves, including electric current, electric and magnetic fields, electromagnetic radiation (especially at microwave frequencies), ultrasonics, and possibly lasers. Since electrical stimulation is capable of activating neural centers, Dr. Pinneo and his colleagues decided to dispense initially with ultrasonics and microwaves, and to commence their experiments using currents and fields. (It is quite possible, however, that the mechanical stimulation of microwaves might, in the end, prove the better way to go.)

The object was to ascertain if a large number of electrodes distributed around the outside of the skull could be energized so that the pattern of currents created would sum to exceed the stimulation threshold at one point and one point only.

The results showed, however, that the maximum distance the electrodes could be moved away from the internal target and still produce the desired effects within the criteria established was about 8 mm. Beyond that, the currents had to be increased to the point where intervening neurons were triggered and extraneous muscular movements occurred.

Several methods of applying electromagnetic fields were tried. These included setting up patterns of standing waves from two sources that would produce a beat-frequency at the target; transmitting trains of pulses that would intersect and add at the target; and dielectric lenses to focus multiple beams of electromagnetic energy onto the target. The snag encountered in all of these approaches was that high frequencies—in the order of Gigahertz—were needed to achieve the necessary accuracy. At these frequencies, body-tissue attenuates electric fields strongly, which means that the depth of penetration achievable was insufficient.

An interesting outcome of these studies stemmed from the use of salt water as an approximate model of brain material. Seawater absorbs electromagnetic energy increasingly up to frequencies of around 10^{14} Hertz. Beyond that an attenuation "window" exists at which absorption falls rapidly

by a factor of about a million, and then climbs again to peak at around 10^{16} Hertz. Thus at 10^{15} Hertz, seawater is transparent to electromagnetic energy; the effect is similar to the well known optical and radio windows that exist through the atmosphere.

Should a similar window exist in the attenuation properties of brain material, the problem of depth penetration would be solved. With this difficulty removed, any of the above methods might prove feasible.

Unfortunately, this line of investigation was not taken any further when the Navy, which had provided funding for the project, elected not to continue. At about this time, however, Dr. Pinneo was approached by George Lawrence of ARPA (Advanced Research Project Administration) and invited to submit proposals for a study of biocybernetics techniques aimed at developing new man-machine interfaces.

But ARPA was interested in having the interface work both ways, i.e., of getting information from the brain to the machine as well. This was an area that had not been probed and the final proposal agreed upon took the broad form of halting machine-to-brain research at that point and commencing a study of brain-to-machine possibilities to bring that side of things into balance.

The method finally selected for further investigation hinged upon the known fact that the act of uttering a given word causes a unique pattern of electrical activity to be produced in the muscles controlling the larynx. Such patterns can be captured by the established methods of 'electromyography'. More interestingly, the same pattern is found to appear even when the word is thought, without being actually voiced. The electromyographic waveforms recorded when a subject reads a passage aloud correlate strongly with those produced by subvocal muscular activity when the subject reads the same passage silently. Further research revealed that similar effects could be obtained from other sites in the body that are related to the faculty of speech, for example the facial muscles associated with articulation, and points on the scalp associated with brain centers in the outer cortex that control respiration, the vocal mechanism, and word formation.

These results were very promising. Particularly encouraging was the realization that for any given word—"stop", for example—a whole set of correspon-

ding patterns could be captured from different brain centers. This meant that the computer could be programmed to base its recognition on the results of a number of semi-independent matches. Thus, even if the signal from one center proved difficult to interpret for some reason, the chances of a correct decision would still be high by virtue of agreement among the rest. In other words, this approach held the promise of becoming a highly reliable method.

The team assembled at SRI to pursue this line further was composed of experts in computer science, pattern recognition techniques and electromyography. The program that they finally developed involved selecting suitable subjects, training the subjects, recording their template patterns, and, finally, conducting actual experiments on-line to a computer.

The brain organization to integrate speech is different in different people. In most, speech is closely coupled to well-defined areas of the left cerebral hemisphere. In some, the situation is reversed; speech is handled on the right. In a few cases, remarkably, both hemispheres get involved, some words being controlled from one side and some from the other. The degree of organization of these functions affects the ease with which the patterns generated can be classified and correlated. For the purpose of preliminary research, the first step was to select individuals with whom difficulties would be minimal.

The next step was to train them. The objective was to build up a library of templates to be stored in the computer, which would provide standards against which the machine could later compare the patterns detected on-line. The patterns that my brain produces when I say or think 'stop' are consistent for me, but they are not identical to somebody else's. The machine therefore has to be taught which particular forms are characteristic of which particular subjects. But even then, a single subject can confuse things by varying his timing, intonation, inflexions and so forth. To give the computer a fair chance the subject really ought to make himself consistent. To do this, he requires training and practice. Some subjects were superb at this, managing to reproduce patterns that the computer could recognize with 100% accuracy. It worked better when the words were actually spoken, which is probably not surprising. The availability of auditory

and motor signals would naturally facilitate better repeatability by providing feedback.

Once a reliable library of templates had been built up, they were analysed on a CDC 6400 to extract salient characteristics that could be used as checkpoints in the on-line experiments in real time. The results were programmed into a Digital Equipment LINC-8 and the outcome was the remarkable series of demonstrations with the TV camera described earlier. So far, the system has handled a vocabulary of seven commands with accuracies ranging from 60% to 100%. That may sound moderate, but remember the analogy of the cave-man-giant stage of a language. Now extrapolate that by fifty or a hundred years at today's rate of progress!

That was as far as the feasibility study contracted by ARPA went. Dr. Pinneo is continuing with his research at a clinic in Palo Alto. He is optimistic about future possibilities, but at the same time acknowledges that a number of problems remain to be solved before the mind-machine link that many people dream of could become a truly practicable reality. His own view is that it will certainly happen one day—maybe not by the techniques that are envisaged today, granted, but... it'll happen.

The problems of achieving two-way interaction have already been mentioned; nothing that has been tried so far will penetrate deeply enough and still give the precision required. But that low-attenuation "window" might be waiting there to be found, meaning that any one or combination of known technologies could be applied successfully. And several haven't been tried yet. On top of that, new developments in physics undoubtedly lie waiting to be uncovered. The point is that the principle seems to have been proved. All it's waiting for is the right tool to come along, just like controlled fusion.

On the input side, there are problems with efficient word communication too. Picking the right word out of a choice of seven is still a long way from handling an uninterrupted stream of syllables. The cultural conditioning and evolutionary faculties that enable humans to accomplish this feat is still far from understood, even after decades of linguistics research aimed at achieving machine translation of natural languages. (If I hear somebody on the phone say "... I'll meet you at seven-o-buzz outside the door ...", I'm so sure

he said "clock" that I probably didn't even hear the *buzz*. Our poor old computer, however, wouldn't have a clue.)

"But why stick to words anyway?" Pinneo asks. After all, with all our talk about revolutionary methods of man-machine communication, doesn't this represent just as much an unthinking conformity to human habits as the keyboards and printers that we're trying to get away from? People don't think in words to begin with; words are just devices to convey thoughts to other people, who happen to be capable of understanding words. People have to communicate through verbal, visual and tactile symbols; computers don't.

So why not aim at machines that respond to concepts? An American, a German, and a Frenchman might say

"good morning", "guten Morgen", or "bon jour" as the case may be, but they all have the same kind of thing somewhere in the same kind of mind. Why not tap into that? After all, conceiving the thought must have its roots in some kind of tangible cerebral activity, just as saying the word has. And if a computer can stimulate centers that control muscles, it can just as easily activate the visual centers that the signals from the retina do (or for that matter the parts of the brain that relate to imagining a face, grasping a mathematical theorem, or enjoying a work of art). Impossible? Dr. Pinneo doesn't think so.

So let's allow our imagination free-rein for a few minutes and think about the kind of future to which this could lead. Let's add some other probable

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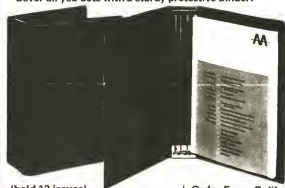
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developments that are widely speculated about, and see what emerges when we tie them all together.

For example, the planet-wide computer system is a commonplace prediction, and the probability is that it will come true; in fact it has already begun. Just as the primitive and isolated telephone networks of the last century gradually became standardized and merged together, so the various data-communications and processing networks that are appearing today will probably become integrated into a world-wide supercomplex. Now add into that complex the intelligent machines that will almost certainly be appearing while that integration is taking place, and you've ended up with a system that's really something. Any information you need on anything at all—movies, documentaries, shopping catalogues, airline bookings, research data, city maps, sales statistics, archives etc., etc., etc.—ask the system. If you want to schedule steel production for the next five years to take account of demand forecasts, technological innovations, projected market swings and prices, siting of plants, location of ores, transportation trends and costs, population movements, alternative materials, energy sources, and so on—the system will figure it out. It absorbs the functions of telephone, computers, mailman and TV (who'd want to watch a pre-canned series of programs that somebody else decided to throw at him when he could pick whatever he's in the mood for, whenever it suits him?). A system like that would need a phenomenal bandwidth to handle millions of individual channels, some people might object. Sure, it would. But, plunging into our bag of prophecies again, projected developments in lasers and optical communications say it's not impossible.

So, given a super-system to run the world for us while we enjoy a life-style comparable to that of the European aristocracy of the 17th century (but this time on a mass scale, with work being done by machines instead of by an underprivileged labouring class), how do we communicate with the system? Well, when this kind of society appears in sf stories, everybody usually has a thing like a color TV-plus-keyboard-plus-hard-copy plugged into the wall at home or wherever, which is used in much the same way as we use our conventional terminals. The responses received might be a bit smarter, but

basically it's the same thing.

Now let's assume that a workable technology for direct I/O to and from the brain has also emerged while all this has been going on, and add that into the picture. What do we have then—a box plugged into the wall with a cable coming out to some kind of helmet? I don't think so. That smacks of too many clichés again. For instance, electronics is getting so much smaller so much faster that it's in danger of meeting the same awful fate as the mythical bird that flew in ever-decreasing circles. So a box that just happens to be about the size of one of today's standard nineteen-inch units doesn't really ring true. More likely whatever electronics are needed will be condensed into a tiny chip of crystal mounted inside the helmet somewhere (perhaps with a big red arrow painted next to it accompanied by the sign: *This is the electronics, to assist in replacement*).

Okay. Our helmet is wired straight into the wall. Right? Maybe not. The Washington, D.C., and Baltimore areas will shortly be commencing an experimental introduction of cordless telephones. The phones will have antennas built-in and you'll be able to use them anywhere—walking down the street if you want to. The principle is the same as that used in the pocket beepers that are quite commonplace nowadays. If walk-around phones are within sight now, then it seems to make sense that our hypothetical bio-operator will use a walk-around helmet.

Or would he? I asked Dr. Pinneo for his views concerning alternative methods of accessing brain activities. The activity in the brain produces magnetic fields that can be measured externally. They are the composite effects of all the patterns of neural activity going on all through the brain. Is it conceivable, I asked, that, with better techniques for signal detection and processing, discrete components might be selected and extracted out of all that scrambling in the same way that a radio can pick just what it wants from the chaos coming through the ether? Might not some method of remotely exciting brain centers be developed which utilizes preferred modes of operation of the centers themselves (analogous to transmitting to a pre-tuned receiver)? The answer was what it could only be: "Who knows?"

So maybe we can get rid of the helmet altogether. Replace it with a lightweight headband, or maybe something that you

wear around your neck or carry in your shirt pocket. The rest of the planet-wide computer system disappears into the brickwork of the cities, beneath the highways and behind the wall-panels of aircraft cabins. Wherever we go and whatever we do, the power of the system is there awaiting the flip of a mental switch to jump into action—a different kind of Genie from a different kind of lamp, but Aladdin had the right idea.

What would we do with it? Well, when you postulate a close-coupled interaction between man and that kind of machine, the list of "maybes" that presents itself is endless. We could throw the pilot that we began with out of his 747-like cockpit for a start. Controlling complicated machines such as aircraft, industrial plants, computer complexes and so on would be done by computers at the basic level, but beyond that the higher-level functions of defining goals and strategies would be freed from the tedium and inefficiency of pressing buttons. The dynamics of riding a bicycle can be expressed as a set of differential equations that relate such quantities as speed, weight of rider, road friction, radius of curve and so on. These equations can be encoded into FORTRAN, fed into a computer which will announce what angle you need to lean at to take the corner without falling off.

The ten-year-old child doesn't bother with any of this. The child simply feels the situation, knows what to do, and does it. Maybe one day we'll be able to "steer" our way through complex mathematical, logical, and conceptual problems using computers in the same way that the child uses its bicycle as an extension of its muscles. Maybe we'll see mental concert pianists who can "play" a concerto in tensor analysis or manufacture emotive sonatas as deftly as John Lill renders Beethoven. Who knows?

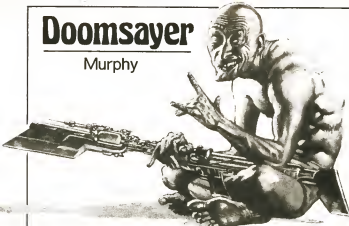
And finally, if anybody can "tune in" to the system, then individuals can surely tune in to each other via the system. Our long-sought-after mind-to-mind link will become viable. As with levitation, remote vision, remote communication, and sun-power, telepathy has become credible, if not yet possible. And we don't need to introduce mystical agencies or way-out physics to talk about it in this light, either. All the ingredients are already here. All we have to do is get a little bit better and a little bit smarter at mixing them

[Continued on page 93]

Think of a Number

Doomsayer

Murphy



The Comprachicos, or Comprapequenos, were a strange and hideous wandering or nomadic affiliation, famous in the seventeenth century, forgotten in the eighteenth, unknown today. They are a part of the old human ugliness. Here and there in the dark confusion of English laws, the impression of this monstrous fact can be found, as one finds the footprint of a savage in a forest.

Comprachicos, as well as Comprapequenos, is a compound Spanish word, which means "Buyers of little ones."

The Comprachicos drove a traffic in children.

They bought them and they sold them.

They did not steal them. The stealing of children is another branch of industry.

And what did they make of these children?

Monsters.

Why monsters?

To make people laugh.

In order to make the human toy a success, he must be taken in hand early. The dwarf must be begun while he is still a baby. They abused childhood. But a straight child is not amusing. A hunchback is funnier.

Hence an art. There were trainers. They took a man and made an abortion of him; they took a face and made a muzzle of it. They stunted growth; they kneaded the physiognomy. This artificial production of monstrosities had its rules. It was a complete science. Imagine orthopaedy reversed.

The Laughing Man
Victor Hugo

SUCH SWEET pain; such delicious misery I see. The future is for the likes of me. (The mutants scream as they grow, their muscles cramped in stunted shells.) The pleasures of agony are my province. I am the one who laughs—not a man—the twisted joke of a man; envious of gnomes and jealous of dwarfs. I will live to see you die. Your blood is my food, your cries and whimpers my dinner call. I feed on your sores, lick your wounds with a ravenous tongue (as you will one day eat your young), suck the marrow from your shattered bone, sip of your tears, and clip the coupons of death. Your future is my playground.

I am born of the occult, the supernatural, the hideous union of your fears and your hate. Manufactured for your pleasure, the pleasure is mine. I have little fear myself. My enemies are knowledge, science, and art. Love is my defeat. (Soon, love—or its pale remains—will be proscribed, the fruit of your loins will be numbered.) But these are rare things in this world or any other. You grasp beyond your reach. I will catch you as you fall.

I relish your petty attempts at learning, because you are so easily defeated, so simply turned back. Like children you demand results which fit your mundane dreams. You seek answers in books of magic and ask questions of the fools who write them. Your imagined gods reflect you—two-bit criminals who demand your worship and take credit for the weather. (Religions will grow to glorious depths—Inquisition reborn.) Your morals are

the fear of being caught. Your standard of good is the common. The exceptional must be destroyed. You laugh at your dreamers. Clutching at the security of a yesterday that never was, you complain about today, and curse tomorrow. (Surely then you'll be correct in your nostalgia.) You legislate mediocrity, teach your children conformity, and preach complacency. Where once men proved their wisdom and courage in the test of battle to become your leaders by acclaim, now you make a profession of liars (called politicians) to guide you, by force—swords are no longer necessary, regulations being enough for this age of anxiety.

Down with science (at last), the hell with truth. You are better than that. Majority vote is truth enough—and if not, you'll count the ballots yourself!

Once there were *comprachicos* who made the likes of me—now there are bureaucrats. The twists of my flesh were invented with iron strips and burning wax. A tedious work... Now minds are molded. Ideas are twisted instead of flesh. A delightful task for those inclined.

My name is Murphy.

As the unique member of my race, I have no allegiance. Prejudice, perhaps... to see you suffer for my existence. You are the audience I was created to entertain. But the laugh is mine. You are cursed. Too weak a vessel to hold the knowledge you have stumbled upon, you must be punished now for your rashness. Having climbed too far, fall back now to that dark swamp of your beginnings. Sacrifice your children in the hope you will be forgiven your boldness. The human being is meant for lesser things.

I will be back, in this place from time to time, to tell you of your folly, to enjoy the look of fear on your faces, as I tell you what your future holds... No final blaze of nuclear mistake. That is too quick. Your suffering will be prolonged. Famine. Plague. Tyrants.

Your grandchildren shall suffer the "gene wars" when Christianity reaches new religious heights by distinguishing life created by God from life created by man, with the aim of eradication of the latter. Your children shall live through the "concept," government by computer.

The majority needs security. You cannot predict success, but failure may be guaranteed. You need only give up the hope of tomorrow, and security is yours. I know just where you'll be!

—G—

Beyond Earth

Gary Hudson



IT HAS now become possible to allow large numbers of people to permanently leave the earth and make a home in deep space. A great deal of effort has been put into the 'How?' of space travel, including propulsion techniques, life support systems, planetary studies, space colonies and a multitude of technologies. Although these are the essential factors that make a civilization in space possible, some thought should be given to the 'Who?' Who will build this civilization—and above all, why?

Science fiction authors have done an admirable job of answering these questions, and a thorough background in speculative fiction is an excellent way to free the mind from prejudices that even the best prognosticators are unknowingly prone to.

This essay will attempt to look at these questions as well. However, it is not science fiction. It is an attempt to adhere to accepted facts about present human nature and the environment of space to discover possible roads that may be taken by space civilizations.

Human nature. A very well-worn term used to explain, and all too often excuse, human behavior. What are some of the basics of human nature that are agreed on by most observers? A very few.

The human being is an animal. He eats, sleeps, reproduces. His basic structure is that of a primate with a primate's standard equipment: arms and legs generally used for manipulation and locomotion respectively, binocular vision, and an all-purpose omnivorous appetite. Early in his career he

was also equipped with sharp teeth, strong jaws, and likely a coat of hair for insulation. An admirable machine for gathering and eating fruits and grubs and making more of his kind. And that's what the human race would still be doing, if not for the brain that has grown and developed over millions of years to become the dominating characteristic of *homo sapiens*. So dominating, in fact, that in an evolutionary sense, man's physical body has become secondary to his mind. Thousands of people survive today who would be totally unable to live without technological aid of an advanced kind. More importantly, countless millions are alive and fed by grace of the technology which permits feeding far more human beings with a given area of land than is possible with any hunting and gathering society, primitive or advanced.

If the mind is the most important characteristic of man, then how is it used to enhance survival? Through the process of production. Production, or productive work, is used here to mean any situation in which the use of the human mind increases the value of a resource to the human being. This not only includes the conversion of raw materials to finished products (which people generally consider the only definition of production), but also services, and even art. All involve the increase in human value of something (an ore, a tree, a blank sheet of paper, a block of marble, a glob of clay, a bowl of vegetables, a mountain, a broken television, a guitar, an acre of soil, a walrus tusk, a chunk of flint—anything at all) by the addition of the creative

power of the human mind. All societies and civilizations above the fruit and grub eating stage have required productive work for survival, ever since the first man or woman picked up a rock and made it of infinite value by killing a small animal and preventing starvation.

Productive work is still required today. Such is the power of today's technology of industry and communication that one man can support many others. This is both good and bad. Good, because it frees many people to create abstract products such as mathematics, art, pure research, and other long term investments of future value to human beings rather than being concerned solely with short term survival production. Bad, because an increasing number of people will cease to produce at all and will become a drain on the increased productive capability of others. Under these conditions, production becomes even more crucial for the former group, and difficult because of the latter. What, then, are the ideal conditions for production? How can the environment (that is, the total outside influence—"natural" or not—on a human being) be made optimum for the vital processes of the human mind?

One thing that is required is resources—raw material from which to create. Anything at all can qualify as a resource. However, if a human being has a certain goal in mind, such as the production of steel, he will find iron ore a far more valuable resource to him than a grove of trees. The inverse would be true of a lumberjack or a park manager. Resources are valuable only to those



Gary Hudson

people who require them to achieve a goal or product. (The importance of the productive process is that the end product produced from the resource is usually valuable to far more people than the original raw material.) Certain resources, like basic machines such as the lever, appear to be required for many if not most productive processes. A good example of this is energy, taken as a class. Metal ores are another.

These types of resources have become critical lately because they are non-renewable. Energy in particular is non-renewable by physical law, the laws of thermodynamics.

Even renewable resources like agricultural resources for food supply, are affected by non-renewable resource problems. Though theoretically infinite, the vast productivity of an acre of land today is dependent on intense use of energy. (To return to a so-called "natural" farming would be dependent on human labor, thus pulling the mathematicians, artists, scientists, managers and other creators of abstract values back to the plow and horse alongside the farmer who has been pulled from his tractor. Thus, not only would the seeds of the future be stifled in the hot sun on the fields, but in the short term, production would drop per acre and starvation face a world population which has long since outgrown the non-mechanized farm.)

Resources are needed—and they are running short.

Another requirement for productive use of the human mind is a goal. A goal, or purpose, is an object or end that one strives to attain. Production is not automatic, it requires intense deliberate use of reasoning processes and a clear idea of what one is trying to do. Even an open-ended research experiment, where the results are unknown, is usually performed for a specific purpose. Only the human mind is capable of the abstraction which allows his thoughts to extend into the future. Without this ability, the human being would be limited to an existence of percepts only, a world of Now, unable to plan, predict, or create for tomorrow.

A third requirement is freedom. A mind that is not permitted to think is forced into a negation of the most fundamental aspect of the human being. A body that is not permitted to act on its rational judgements is a negation of the power to make thought into reality. A human being who is not allowed to keep the product of his mind, whose goods or

services are taken without his consent, becomes a milch cow, a slave whose mind cannot be considered his own, either.

It is obvious that these restrictions cannot be applied by nature or inanimate objects. Nature is a "given." It is the natural arena for man and his mind to strive for production.

This is the true meaning of oppression—one human being, for whatever reason, preventing or exploiting the creative mind/body processes of another human being. Slavery, prison camps, taxation, murder, threats of force, robbery, rape, eminent domain, nationalization, genocide, brain-washing—all say to the victim "You, your mind, your body, and the products they have created are mine to do with as I wish." A human under these conditions cannot function properly.

Freedom, then, is the ability to face nature as man has always done, secure in the knowledge that he can use his mind and abilities without restriction.

A corollary of freedom is room. This world is crowded now, however. People are leaving cities and countries, but are finding fewer and fewer places to go. There is little desirable real estate left.

We now have some of the requirements of optimum human creativity and productivity—of human nature—, simplified to a certain extent.

It is apparent that the earth in general appears to be moving to a point where the requirements of human nature may not be met any more.

Resources are dwindling; goals are being disrupted by unstable economies, governments, and societies; political freedom is on the wane worldwide; and as far as room is concerned, the walls are rapidly closing in.

The term "frontier" has a desirable, romantic connotation to most people because the ideal frontier provides all of the above needs, and provides them indefinitely.

The closest thing we have to an ideal frontier is space.

To the informed person up-to-date in space studies and technology, the solutions offered by space to these problems are well known and well covered elsewhere. Infinite solar power, vast resources of metals and gases, and the endlessness of space—all of these, and the technologies to deal with them, have been minutely detailed by scientists, engineers, scholars, and writers.

The question here is: What will human beings be like in an environment

which can provide all their basic needs, yet is so strange and unlike the earth where they evolved?

I already discussed in the last issue new propulsion concepts which could render transportation to space and between points in space very inexpensive. Space will be within the reach of almost everyone who wishes to go.

Initially, of course, most humans in space will be commuters of a sort, doing "stints" in near orbit or on the moon, but living most of the time on earth. Their reasons for being in space at all will be primarily economic, exploiting the vast industrial potential available. It is this economic base that will be the key to independence from earth eventually, for it will encourage development of low-cost methods of long-term survival in space. These developments will come about because entrepreneurs will find them the best way to reduce the costs of transport of materials and people to and from the earth's surface. Utilization of these techniques for long-term habitats in space or on the moon will be for economic purposes, for the same reasons that towns and cities eventually grow around business and trade areas.

It is important to see that these habitats are a result, not a cause of economical space exploitation. Production in space must come first, and the rest will follow naturally. A difficulty with the Space Colonization movement has been a tendency to advocate the construction of space colonies first, and worry what to do with them later. Recently, this approach has been modified by the addition of the solar power satellite concept to economically justify the large habitats. Still, the powersats have been the only industry that has been addressed in detail. While it is presumed that there will be other productive ventures, they have been ignored in favor of the living aspects of space colonies. These living aspects are vital considerations, but living conditions and the lives of the people in these habitats will center primarily around their work, their primary reasons for being in space at all.

Colonies will begin as "standard" inexpensive space stations. Initially, they may resemble the "wheel" type of station, producing gravity at the rim by rotation. Some people may live in zero gravity conditions, but in the "commuter" stage of space civilization, there could be problems involved in constant earth-to-orbit travel if one must alter-

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nate constantly between zero gravity and one G. (Observations of future astronauts on the space shuttle and others will be critical in discovering if this is a problem or not. If it happily turns out that a human being can readily adapt to long, alternating periods of gravity and weightlessness without trouble, then the whole complex artificial gravity question may become a dead issue. Since a zero-G space station is inherently easier to construct than a rotating one, it will be cheaper and more adaptable to changing needs. This will produce efforts quite early in the history of space civilization to find methods of allowing human beings to make this gravity/no-gravity adaptation. It may be that drugs and therapies will be found that will do this.)

If the adaptation to constant weight

changes cannot be readily made, then rotating space stations will retain their importance as space habitats. Yet the economic pressures will still tend to favor zero-G orbital habitats. This may produce a class of people who will avoid the gravity change problem by remaining permanently in space, returning to earth rarely, and only after intense therapy and exercise. Such individuals would be rare at first, since the initial efforts at space habitats would tend to be rather spartan whether zero-G or not, and powerful motivation would be required for people to stay there permanently. Such motivations, of course, exist: higher pay is an example. It may be that the construction and maintenance cost savings produced by a weightless space habitat may be large enough to allow considerable increases

in monetary and luxury compensation to personnel. People may have personal reasons as well for taking difficult permanent positions in space. Those determined to leave earth for whatever reason will of course try for more comfortable jobs there, but if none are available will still take less popular jobs where a less determined individual might give up and look for work on earth.

Higher pay, and need for jobs will act in tandem on qualified people respectively, slowly creating a population living for long or indefinite periods in space or on the moon. Examples of these motivations acting here on earth to draw people to faraway or difficult environments are numerous. Higher pay and luxury have most recently been used by oil companies to attract



Gary Hudson

employees to the Arctic Circle for oil pipeline construction in Alaska. Pay was exceedingly good, and sumptuous meals, luxurious living quarters and even swimming pools were the rule in the pillar-mounted metal habitats built there for employees. The need for work is a far commoner motivation on earth, with migrant workers doing difficult jobs that local unemployed refuse. Some of these workers even risk crossing borders illegally to find jobs, and live under constant threat of deportation even if they are gainfully employed. It seems likely that unpopular work in space would be no exception to this type of motivation, and with cheap transportation and burgeoning space industry, the one-way flow of "space migrants" will be as great, or more so, than the back-and-forth flow of "space commuters." With employment statistics similar to those today, it also seems likely that many of these migrants would be members of minorities.

These people, probably from various minority groups for the most part, will be the hard working base of a permanent civilization in space. It is the permanent resident, knowing he will have to live or die in the new home he has chosen, who will develop the most ingenious methods of dealing with his environment. Such methods, by their nature, will tend to be easier and less expensive than standard methods used now for survival in space. New and radical designs for life and work in space will be developed by those who are struggling the most with the lack of capital required for systems resembling (and priced like) present-day systems. They will do so because they do not have a choice, and they will thereby be among the first to make a successful stand in space.

This is why the O'Neill colony approach cannot be as efficient in creating a true space civilization—it is simply a completely transplanted earth civilization with no new ideas on dealing with space on its own terms other than those required to protect the earth environment from space. So we will leave the commuters and Space Colony inhabitants to their successful, but inherently limited, niche in space civilization, and look at the new inhabitants of space.

Who are they? They are the innovators, the cutting edge of humanity. Those who live successfully on the frontier tend to be purposeful people

who make the best productive and creative use of their minds. The rest are weeded out early in the game, either dying or fleeing to more earthlike environs. Many, for reasons previously mentioned, will have a minority background, but it is likely that this will be of no importance to them except as an addition of valuable cultural heritages and ideas to the space civilization.

Voluntary co-operation between all types of rational people, and pooling of their ideas, would naturally tend to enhance a culture's chances for survival more than tribalism or cultural isolationism would.

An excellent example of this type of healthy cultural mix in space can be found in Robert Heinlein's *The Moon is a Harsh Mistress*. In this book, reasons for the cultural mix and for emigration to space itself were political rather than economic, but the results are much the same. Many types of people from many backgrounds are thrown together to produce a lively, successful, and colorful culture on the surface of the moon. Mixes of races, languages, styles and technologies are the rule, resulting in a sophisticated society in many ways superior to most on earth.

It should be pointed out that some people will remain culturally isolated quite deliberately, yet still manage to survive. This could be done only if such isolation is of critical importance to these people, more important than possible failure to live successfully in space. Examples of this would be groups who will emigrate for reasons of religious or political persecution, like the Pilgrims of early America, or certain people to whom preservation of a specific culture is critical. Some groups of American Indians whose cultures are being slowly destroyed on earth, come to mind. (It is difficult to see how an earth-centered culture could thrive unchanged in space, but cultures have managed to rationalize more drastic changes in the past.)

Space civilization will be built by miners, scientists, teachers, farmers, and members of countless other professions. Many of them will develop a multitude of skills to make up for a lack of population typical of pioneer environments. . . at first. There will be children, of course, and elders (possibly a great number of the latter if low or zero gravity is beneficial to their health).

And they will adapt to nearly every environment space has to offer, using low-cost energy and low-cost transport.

They will live in space between the worlds, in habitats that spin or float free. These will consist of carved asteroids, glittering space stations, maze-like clusters of dwellings, old fuel tanks, and anything else that can be made into homes, studios and factories.

They will live on planets. They will tunnel into the solid rock of the moon and raise low domes over craters and fill them with air for their agriculture.

They will carve the asteroids, removing precious metals and ores and filling vast caverns with light and life in their place. Shipments of metals will drift down low-energy orbits to earth, whose economic needs are still a major fuel for the success of such operations, although it will become less important as the people of space begin trade amongst themselves.

They will live on Mars, wresting air from the oxygen-rich soil, and mining ice at the poles. If terraforming is feasible, the atmosphere of Mars or even Venus could be made hospitable to unprotected human beings.

Isotopes of hydrogen and helium may be mined from the outer planets, and frozen water shipped to those worlds where it does not flow free.

Finally, the gulf between the stars will stand in front of them. Who will venture to cross it? Although economics will have been a powerful force in creating space civilization, it will not be the only one. The need to be free, the need for room, both of these forces will drive space civilizations. Even though the entrepreneur of the future may eventually profit from trade between the suns, the first ones who set out on the long journey will be those who will go because they are by nature pioneers, and because the stars are there.

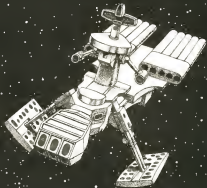
—G—



WHO CAN TELL US WITH ANY DEGREE OF CERTAINTY WHETHER THE DRAMA WE ENACT IS COMEDY OR TRAGEDY? DOES AN UNSEEN DIRECTOR STAND BEHIND THE SCENES—OR HAS HE LEFT THE THEATER? IS JUSTIN CASE, 23, MALADJUSTED ASSOCIATE CITIZEN OF AN OVERCROWDED EARTH, THE HERO OF HIS PERSONAL PLAY—OR THE FOOL? WE KNOW THAT LIFE AS AN IMPDETURED ASTEROID MINER OFFERED A GLIMMER OF A HAPPY OUTCOME TO JUSTIN—UNTIL THE DAY HIS GOPHER CRASHED ON AN AIRLESS PLANETOID, UNTIL HE DISCOVERED AND IN DESPERATION ACTIVATED THE ALIEN DEVICES THAT HAVE TAKEN HIM.

CROSSWIRED

by John Kessel and Terry Lee





ANCIENT ALIEN MACHINES HAVE TRANSPORTED JUSTIN CASE, A MARDOONED ASTEROID MINER, TO A PARALLEL UNIVERSE A HABITABLE PLANET FLOATS IN PLACE OF THE COSMIC DEBRIS OF THE ASTEROIDS, WANDERING THROUGH THE ARID OUTBACK, DAZED, JUSTIN IS PICKED UP BY A WILY ADVENTURER—MARK DOWN.



YOU'RE LUCKY I STOPPED I THOUGHT AT FIRST YOU WERE A G'HOST



YOU KNOW—A GAMMA HOST A REBORN DEAD PERSON? A CREEPY CLOWN



I FIGURED AS MUCH YOU'VE GOT A FUNNY ACCENT I BET YOU'RE NOT EVEN FROM LEDA WHAT PLANET YOU FROM?



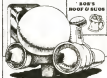
EARTH! YOU LOOK PRETTY HEALTHY FOR A TERRAN!



WHAT SAY WE STOP IN THIS G'HOST TOWN AND GET A DRINK? I DON'T LIKE G'HOSTS ANY MORE THAN YOU DO, BUT I'M THIRSTY.



THE G'HOST TOWN IS MORE AN INTRICATE MACHINE THAN A TOWN—A MACHINE TENDING THE COLD DESIRES OF HUMANS WHO DO NOT LOOK QUITE HUMAN TO JUSTIN. THE TWO STRANGERS, MINING SECRET THOUGHTS, ENTER THE CITY OF STRANGERS.



SO I'M ON MY WAY TO THE RUINS AT THE TWISTED CITY I'VE GOT AN IDEA THAT COULD EARN SOME CREDITS.



YOU'D NEVER CATCH ME SELLING MY BODY AS A HOST—NO MATTER WHAT THEY PAY.



THESE RICH FOOLS! WHEN THEY DIE THEY HAVE THEIR PERSONALITIES HOLOGRAMMED ONTO A VIRUS THAT'S INJECTED INTO A HOST PERSON SO THEY GET A COUPLE EXTRA MONTHS OF FEEBLE LIFE IN A G'HOST TOWN.



BUT IN THE END THEY JUST WEAR THEMSELVES OUT AND FADE AWAY WITH NOTHING LEFT TO SHOW BUT A SICK PERSON.



WHY DO THEY DO IT?

NODDYP WANTS TO DIE, KID

SHE'S.....GONE!

SHE'S ALIVE!



THE DEAD-AND WE HAVE ALL MET THE DEAD-CAN'T BEAR BEING REMINDED OF THEIR OWN MORTALITY. AND THEY HAVE NO USE FOR THE LIVING.



GET THIS THING OUT OF HERE!

CHECK



TAKE IT EASY, JUSTIN. LIFE IS UNFAIR

SARAH!

A WOMAN DISCARDED LIKE A DAMP POPSICLE STICK, MARK MAY NOT APPROVE OF THIS EVERYDAY TRAGEDY, BUT HE KNOWS HOW TO KEEP HIS NOSE CLEAN. FOR JUSTIN, HOWEVER, SOMETHING IN THIS LANCES AN EMOTIONAL BOIL



JUSTIN INTERVENES



SARAH! HOW DID YOU GET HERE?

WHO DO YOU KNOW MY NAME?



IT'S ME, JUSTIN!

POPS OFF ANDROID! DON'T KNOW YOU



HAPPY BIRTHDAY, MIGHTY MUTT!

BUT SARAH! I!

THE SARAH OF THIS WORLD HIDES HER EYES FROM JUSTIN IN FEAR. BUT THERE ARE MANY WORLDS. THE LOST TRAVELLER RECALLS ANOTHER SARAH, A SARAH ON THE OTHER SIDE OF THE ALIEN GATEWAY HE HAS CROSSED



I HAVE TO GO I DON'T HAVE ENOUGH MONEY TO BUY AN EARTH JOB

THAT'S TOO BAD

ON AN EARTH WHERE HARSH ECONOMIC LAWS COUNT FOR MORE THAN HUMAN EMOTION



I'M SELLING MYSELF TO THE TRIANGLE ASTEROID MINES IF I- WHEN I MAKE A STRIKE I'LL COME BACK

SURE GOOBYE, JUSTIN



NOT GOOBYE AUF WIEDERSEHEN

I WONDER WHAT'S ON CHANNEL 200

NOW YOU GET YOURS, FRIEND!



WHY'D SHE RUN AWAY? WHAT'S SHE AFRAID OF?

WISE UP JUSTIN LIKE EVERYBODY, SHE'S JUST AFTER THE FOLDING GREEN

NEXT: BETRAYED!

Did You Say Iguanacon?

Leslie Turek

YES, I did, but if you'd like something more formal, how about the 36th World Science Fiction Convention? Popularly known as "Iggy," the 1978 Worldcon will be held Labor Day weekend in Phoenix, Arizona. It will be a gathering of over 3000 science fiction writers, artists, editors, and just plain fans, who will spend four busy days and nights in a celebration of science fiction.

Worldcons originated back in the dim dark days when science fiction was "that crazy Buck Rogers stuff" and the readers of sf felt themselves a small, embattled minority. The first Worldcon was held in New York in 1939, with an attendance of under 200. Admission was free and the program had many of the elements of a modern Worldcon: there were talks (John W. Campbell spoke on SF's need to keep evolving and advancing); films were shown (*Metropolis*); some attendees wore futuristic costumes; some sold copies of their fanzines; there was an auction of manuscripts and artwork; and there was a banquet, although only 32 of the attendees could afford the high price of \$1.00. This first Worldcon was called "Nyon," starting the tradition of giving the Worldcons short, snappy names relating to the locations, a practice that has continued right up to the present day with IguanaCon.

The administration of the Worldcons is highly unorthodox. Although there is a formal World Science Fiction Society (WSFS), it has no officers and no fixed membership. (The membership of WSFS is defined as the membership of the current Worldcon.) Each Worldcon committee is an autonomous group of volunteers, completely independent of all other Worldcons and free to operate pretty much as it pleases, as long as it conforms to the minimal requirements specified by the WSFS Constitution.

The Worldcon committee is selected two years before the convention actually occurs, and usually sends out a series of Progress Reports to all the convention members. These report on the committee's plans for the convention, and often

contain letters from the members offering suggestions or criticism.

One important aspect of Worldcon membership is the nomination and voting for the annual Science Fiction Achievement Awards, called the Hugos, after Hugo Gernsback. All Worldcon members are eligible to vote for the Hugos, unlike many other awards which are made by a select committee. Hugo nominating and balloting are conducted by mail during the year of the convention, with the winners announced at a special ceremony (frequently a banquet) which is one of the high points of the Worldcon.

The members of each Worldcon also choose the site of the Worldcon to be held two years later. Members can vote by mail, but the final vote and announcement of results take place at the convention.

The Worldcon itself is a seventeen-ring circus by day and an unending round of parties by night. There's so much going on that some people never leave the convention hotel to see the city they're visiting. (Even last year, when the Worldcon was in a beachfront Miami Beach hotel, only a few people managed to find the ocean!)

Usually the official program runs from Friday through Monday, with some preliminary events Thursday night. The center ring of the circus is the formal main program, which runs through the afternoons with talks and panels on various topics. The best way to find out about the formal program is to get a copy of the Noreascon Proceedings, the complete transcript of the 1971 Worldcon in Boston (\$12, The NESFA Press, Box G, MIT Branch PO, Cambridge, MA 02139). Consequently, there are smaller talks or seminars on topics of special interest. Some people come to the Worldcon just to see the film program, which sometimes runs all day and night and presents all types of SF films.

During the day you can also visit the art show, which exhibits hundreds of pieces of sf artwork, most of them up for bids. You will find works of all styles

and prices, from fan sketches selling for a few bucks to cover paintings that may bring hundreds of dollars.

Another feature that aims to part the fan from his money is called the hucksters' room. This is an area where dealers display and sell their wares—everything from current paperbacks to collector's items, small press publications, movie posters and slides, art prints, fantasy jewelry, and pointed ears. Few fans can pass through the hucksters' room and emerge unscathed.

Each evening a special event is held. The first night is often a "Meet the Pros" party, where the attending notables wear funny hats so you can locate them to get their autographs or just say hello. Another popular feature is the Masquerade, where anyone who wants to can appear in costume and compete for awards. The final night is usually the Hugo presentation, and often the Guest of Honor is the featured speaker at a banquet.

After the official events come the unofficial parties. These are a major part of the convention for many fans, since they provide a chance to make new friends or renew old acquaintances. If you're new to Worldcons and don't know many people, just keep your ears open. If you hear people talking about numbers like "614" and "1027," they are very likely the numbers of hotel rooms that will be hosting parties. Some will be private, but many will be open, so just knock on the door and politely inquire. Frequently, committees bidding for future Worldcons will hold "bidding parties" which are widely advertised and open to all. If all else fails, a sure way to find a party is to hold one yourself and invite everyone you see. (Don't be afraid to invite your favorite authors; there's a good chance they will actually stop by.) And don't be afraid to stay up late partying; almost nothing is scheduled before noon at a Worldcon, for that very reason.

Anyone can attend a Worldcon; you don't have to be chosen as a delegate and you don't need any credentials. Attending memberships are usually cheaper if purchased in advance and more expensive at the door. Worldcons also offer supporting memberships for those that cannot attend; supporting members receive the publications and are entitled to vote in the Hugo and site selection balloting.

—G—

Did You Say Iguanacon?

Conebulus 2, July 7-9, Syracuse Hilton, Syracuse NY. GOH: Ben Bova, \$7.50, info: Carol Gobeys, 619 Stolp Ave., Syracuse NY 13202.

Unicon, July 7-9, Sheraton Silver-springs, Silversprings MD. GOH: Ted Sturgeon, info: Unicon, POB 263, College Park MD 20740.

Archon II, July 14-16, Hilton Inn, Berkeley MO. GOH: C.J. Cherryh, \$8, info: Archon II, POB 15852, Overland MO 63114.

Empiricon, July 14-16, Hotel Taft, NYC. GOH: Alfred Bester, \$7, info: Susan Rothman, 35 Seacoast Terrace, Brooklyn NY 11235.

Autoclave 3, July 21-23, Sheraton, Southfield MI. GOH: Terry Hughes, \$7, info: Leah Zeldes, 21961 Park-lawn, Oak Park MI 48237.

OKom, July 22-23, Mayo Hotel, Tulsa OK. GOH: Joe Haldeman, Wilson Tucker, R.A. Lafferty, C.J. Cherryh, Lee Killough, info: OKom, Box 4229, Tulsa OK 74104.

Paracon I, July 28-30, Sheraton Penn. State Inn, \$6, State College, PA. info: ParaCon c/o Ramsey, 622-N.W. Beaver Ave., State College PA 16801.

Rivercon, July 28-30, Stouffer's Louisville Inn, Louisville KY. info: Rivercon, POB 8251, Louisville KY 40208.

Iguanacon, 36 World Science Fiction Convention, August 30-September 4, Hotels Adams & Regency Hyatt, Phoenix AZ. GOH: Harlan Ellison, \$25, info: Iguanacon, POB 1072, Phoenix AZ 85001.

Fantasy Faire VIII, September 22-24, Pasadena Hilton, Pasadena CA. \$7.50 to September 1, \$10 after, info: Fantasy Faire, 18552 Main, Alhambra CA 91801.

Pghlange X, September 29-October 1, Marriot Inn, Pittsburgh PA. GOH: Rick Sternback, \$7.50 to September 5, \$10 after, info: Barbara Gerland, 1202 Benedum-Trees Bldg., Pittsburgh, PA 15222.

4th World Fantasy Convention, October 13-15, Sheraton Hotel, Ft. Worth TX. GOH: Fritz Leiber, \$15 to September 5, \$20 after, info: Michael Templin, 1309 S. West St., Arlington TX 76010.

Octacon II, October 14-15, Santa Rosa CA. \$6 & \$8 to September 9, \$7 & \$10 after, info: Box 1824, Santa Rosa CA 95402, SASE.

Seacon, 37th World Science Fiction Convention (1979) Brighton, England. U.S. agents: Tony Lewis, Pussywillows of Wheeler Lane, Natick, MA 01760.

Leslie Turek

The Galileo PRIZE

For the short-short story under 3000 words

The short story requires a greater concentration of talent and energy than any other form of fiction. This special story form is not only the foundation of Science Fiction, but a unique American contribution to literature (credited to Edgar Allan Poe and the tabloid publishers of the 1840's). The short-short story, under 3000 words, is an even more difficult and demanding form calling for a special synthesis of theme, plot, characterization and setting which, at its best, approaches poetry in concentrated impact.

GALILEO magazine would like to encourage this art form through an annual prize for the best work received for publication during any one year. All works of fiction under 3000 words received between January 1st and December 31st will be considered for both publication in GALILEO and the annual prize, to be awarded in spring of the following year.

We hope that, by offering a substantial amount in the form of prize money in addition to our regular rates, both new talent and those more established writers who would be more likely to spend their time on longer works, will be encouraged to submit work to GALILEO throughout the year. Frederick Brown, Isaac Asimov, and Ray Bradbury serve as the exemplars of the short-short story in Science Fiction, but "name" value will not be considered as each story is judged on its own merits.

First Prize: \$300, Second Prize: \$200; Third Prize: \$100.

All submissions must contain a self addressed, stamped envelope. Each must be completely original and previously unpublished. Manuscripts should be sent to:

GALILEO, 339 Newbury Street, Boston, MA 02115

Natalie was nearly in tears. "He knows all his Bible stories. And he can read. He's read almost all of the New Testament by himself."

had slicked it down with water. His wide face, inset and shadowed by his cheek flaps, was as impassive as ever.

Natalie signed something to him. He stood silent, his long arms hanging limply at his sides. She turned back to Reverend Hoyt. "He wants to be baptized! Isn't that wonderful? Tell him, Esau."

He had seen it coming. The Reverend Natalie Abreu, twenty-two and only one year out of Princeton, was one enthusiasm after another. She had revamped the Sunday school, taken over the grief counselling department, and initiated a standard of priestly attire that outraged Reverend Hoyt's Presbyterian soul. Today she had on a trailing cassock with a red-and-gold embroidered stole edged with fringe. It must be Pentecost. She was short and had close-cropped brown hair. She flew about her official duties like a misplaced choir boy in her ridiculous robes and surplices and chasubles. She had taken over Esau, too.

She had not known how to use American Sign Language when she came. Reverend Hoyt knew only the bare minimum of signs himself, "yes" and "no" and "come here." The jobs he wanted Esau to do he had acted out mostly in pantomime. He had asked Natalie to learn a basic vocabulary so they could communicate better with the orang. She had memorized the entire Ameslan handbook. She rattled on to Esau for hours at a time, her fingers flying, telling him Bible stories and helping him with his reading.

"How do you know he wants to be baptized?"

"He told me. You know how we had the confirmation class last Sunday and he asked me all about confirmation and I said, 'Now they are God's children, members of God's family.' And Esau said, 'I would like very much to be God's beloved child, too.'"

It was always disconcerting to hear Natalie translate what Esau said. She changed what was obviously labored and fragmented language into rhapsodies of adjectives, clauses, and modifiers. It was like watching one of those foreign films in which the actor rattled on for a paragraph and the subtitle only printed a cryptic, "That is so." This was reversed, of course. Esau had signed something like, "Me like be child God," if that, and Natalie had transformed it into something a seminary professor would say. It was impossible to have any real communication with Esau this way, but it was better than pantomime.

"Esau," he began resignedly, "do you love God?"

"Of course he loves God," Natalie said. "He'd hardly want to be baptized if he didn't, would he?"

"Natalie," he said patiently, "I need to talk to Esau. Please ask him, 'Do you love God?'"

She looked disgusted, but signed out the question. Reverend Hoyt winced. The sign for "God" was dreadful. It looked like a sideways salute. How could you ask someone if they loved a salute?

Esau nodded. He looked terribly uncomfortable, standing there. It infuriated Reverend Hoyt that Natalie insisted on his

standing up. His backbone simply wasn't made for it. She had tried to get him to wear clothes, too. She had bought him a workman's uniform of coveralls and cap and shoes. Reverend Hoyt had not even been patient with her that time. "Why on earth would we put shoes on him?" he had said. "He was hired because he has feet he can use like hands. He needs them both if he's going to get up among the beams. Besides which he is already clothed. His hair covers him far more appropriately than those ridiculous robes you wear cover you!" After that Natalie had worn some dreadful Benedictine thing made of horseshair and rope until Reverend Hoyt apologized. He had not given in on the matter of clothes for Esau, however.

"Tell Esau to sit down in the chair," he said. He smiled at the orangutan as he said it. He sat down also. Natalie remained standing. The orangutan climbed into the chair frontwards, then turned around. His short legs stuck out straight in front of him. His body hunched forward. He wrapped his long arms around himself, then glanced up at Natalie, and hastily let them hang at his sides. Natalie looked profoundly embarrassed.

"Esau," he began again, motioning to Natalie to translate, "Baptism is a serious matter. It means that you love God and want to serve Him. Do you know what serve means?"

Esau nodded slowly, then made a peculiar sign, tapping the side of his head with the flat of his hand.

"What did he say, Natalie? And no embellishments, please. Just translate."

"It's a sign I taught him," she said stiffly. "In Sunday school. The word wasn't in the book. It means talents. He means..."

"Do you know the story of the ten talents, Esau?"

She translated. Again he nodded.

"And would you serve God with your talents?"

This whole conversation was insane. He could not discuss Christian service with an orangutan. It made no sense. They were not free agents. They belonged to the Cheyenne Mountain Primate Research facility at what had been the old zoo. It was there that the first oranges had signed to each other. A young one, raised until the age of three with humans, had lost both parents in an accident and had been returned to the Center. He had a vocabulary of over twenty words in American Sign Language and could make simple commands. Before the end of the year, the entire colony of oranges had the same vocabulary and could form declarative sentences. Cheyenne Mountain did its best to educate their oranges and find them useful jobs out in society, but they still owned them. They came to get Esau once a month to breed him with females at the center. He didn't blame them. Orangs were now extinct in the wild. Cheyenne Mountain was doing the best they could to keep the species alive and they were not unkind to them, but he felt sorry for Esau, who would always serve.

He tried something else. "Do you love God, Esau?" he

Samaritan

Connie Willis

The people of the Cynarrie, when they travails in the Woods, make fires where they sleeps in the night; and in the morning, when they are gone, the Pongoes will come and sit about the fire, till it goeth out: for they have no understanding to lay the wood together.*

Andrew Battell—1625

REVEREND HOYT KNEW IMMEDIATELY what Natalie wanted. His assistant pastor knocked on the half open door of his study and then sailed in, dragging Esau behind her by one hand. The triumphant smile on her face was proof enough of what she was going to say.

"Reverend Hoyt, Esau has something he wants to tell you." She turned to the orangutan. He was standing up straight, something Reverend Hoyt knew was hard for him to do. He came almost to Natalie's shoulder. His thick, squat body was covered almost entirely with long, neatly brushed auburn hair. He had only a little hair on top of his head. He

*Orangutans.

Courtney Skinner



asked again. He made the sign for "love" himself.

Esau nodded. He made the sign for "love".

"And do you know that God loves you?"

He hesitated. He looked at Reverend Hoyt solemnly with his round brown eyes and blinked. His eyelids were lighter than the rest of his face, a sandy color. He made his right hand into a fist and faced it out toward Reverend Hoyt. He put the short thumb outside and across the fingers, then moved it straight up, then tacked it inside, all very methodically.

"S—A—M—" Natalie spelled. "Oh, he means the Good Samaritan, that was our Bible story last week. He has forgotten the sign we made for it." She turned to Esau and dropped her flat hand to her open palm. "Good, Esau. Good Samaritan." She made the S fist and tapped her waist with it twice. "Good Samaritan. Remember?"

Esau looked at her. He put his fist up again and out toward Reverend Hoyt. "S—," he repeated, "A—M—A—R—" He spelled it all the way through.

Natalie was upset. She sat rapidly at Esau. "Don't you remember, Esau? Good Samaritan. He remembers the story. You can see that. He's just forgotten the sign for it, that's all." She took his hands and tried to force them into the flattened positions for "good". He resisted.

"No," Reverend Hoyt said, "I don't think that's what he's talking about."

Natalie was nearly in tears. "He knows all his Bible stories. And he can read. He's read almost all of the New Testament by himself."

"I know, Natalie," Reverend Hoyt said patiently.

"Well, are you going to baptize him?"

He looked at the orang sitting hunched in the chair before him. "I'll have to give the matter some thought."

She looked stubborn. "Why? He only wants to be baptized. The Ecumenical Church baptizes people, doesn't it? We baptized fourteen people last Sunday. All he wants is to be baptized."

"I will have to give the matter some thought."

She looked as if she wanted to say something. "Come on Esau," she said, signing to the ape to follow her.

He got out of the chair clumsily, trying to face forward while he did. Trying to please Natalie, Reverend Hoyt thought. Is that why he wants to be baptized, too, to please Natalie?

REVEREND HOYT SAT AT HIS DESK for some time. Then he walked down the endless hall from his office to the sanctuary. He stood at the side door and looked into the vast sunlit chamber. The church was one of the first great Ecumenical cathedrals, built before the Rapture. It was nearly four stories high, vaulted with great open pine beams from the Colorado mountains. The famous Lazetti window reached the full four stories and was made of stained glass set in strips of stainless steel.

The first floor, behind the pulpit and the choir loft, was in shadow, dark browns and greens rising to a few slender palm trees. Above that was the sunset. Powerful oranges, rich rose, deep mauve dimmed to delicate peach and cream and lavender far over the heads of the congregation. At about the third floor level the windows changed imperceptibly from pastel-tinted to clear window glass. In the evenings the Denver sunsets, rising above the smog, blended with the clouds of the window. Real stars came out behind the single inset star of bevelled glass near the peak of the window.

Esau was up among the beams. He swung arm over arm,

one hand trailing a white dusting cloth. His long hairy arms moved surely among the crosspieces as he worked. They had tried ladders before Esau came, but they scratched the wood of the beams and were not safe. One had come crashing down within inches of the Lazetti window.

Reverend Hoyt decided to say nothing until he had made up his mind on the matter. To Natalie's insistent questions, he gave the same patient answer. "I have not decided." On Sunday he preached the sermon on humility he had already planned.

Reading the final scripture, however, he suddenly caught sight of Esau huddled on one of the pine crosspieces, his arms wrapped around a buttress for support, watching him as he read. "But as for me, my feet had almost stumbled, my steps had well-nigh slipped, I was stupid and ignorant. I was like a beast toward thee."

He looked out over his congregation. They looked satisfied with themselves, smug. He looked at Esau.

"Nevertheless I am continually with thee; thou dost hold my hand. Afterward thou wilt receive me to glory. My flesh and my heart may fail, but God is the strength of my heart and my portion forever." He banged the Bible shut. "I have not said everything I intend to say on the subject of humility, a subject which very few of you know anything about." The congregation looked surprised. Natalie, in a bright red robe with a yellow silk chasuble over it, beamed.

He made Natalie shout the benediction over the uproar afterwards and went out the organist's door and back to the parsonage. He turned down the bell on the telephone to almost nothing. An hour later Natalie arrived with Esau in tow. She was excited. Her cheeks were as red as her robe. "Oh, I'm so glad you decided to say something after all. I was hoping you would. You'll see, they'll all think it's a wonderful idea! I wish you'd baptized him, though. Just think how surprised everyone would have been! The first baptism ever, and in our church! Oh, Esau, aren't you excited! You're going to be baptized!"

"I haven't decided yet, Natalie. I told the congregation the matter had come up, that's all."

"But you'll see, they'll think it's a wonderful idea."

He sent her home, telling her not to accept any calls or talk to any reporters, an edict which he knew she would ignore completely. He kept Esau with him, fixing a nice supper for them both and turning the television on to a baseball game. Esau picked up Reverend Hoyt's cat, an old tom that allowed people in the parsonage only on sufferance, and carried him over to his chair in front of the TV. Reverend Hoyt expected an explosion of claws and hurt feelings, but the tom settled down quite happily in Esau's lap.

When bedtime came, Esau set him down gently on the end of the guest bed and stroked him twice. Then he crawled into the bed forwards, which always embarrassed Natalie so. Reverend Hoyt tucked him in. It was a foolish thing to do. Esau was fully grown. He lived alone and took care of himself. Still, it seemed the thing to do.

Esau lay there looking up at him. He raised up on one arm to see if the cat was still there, and turned over on his side, wrapping his arms around his neck. Reverend Hoyt turned off the light. He didn't know the sign for "good night," so he just waved, a tentative little wave, from the door. Esau waved back.

Esau ate breakfast with the cat in his lap. Reverend Hoyt had turned the phone back up, and it rang insistently. He motioned to Esau that it was time to go over to the church. Esau signed something, pointing to the cat. He clearly

The doctor's look was unmistakable. You know what's coming. I am counting on you to be sensible and get these people out of here so they don't have to see it.

wanted to take it with him. Reverend Hoyt signed one rather gentle "no" at him, pinching his first two fingers and thumb together, but smiling so Esau would not think he was angry.

Esau put the cat down on the chair. Together they walked to the church. Reverend Hoyt wished there were some way he could tell him it was not necessary for him to walk upright all the time. At the door of Reverend Hoyt's study, Esau signed, "Work!" Reverend Hoyt nodded and tried to push his door open. Letters shoved under the door had wedged it shut. He knelt and pulled a handful free. The door swung open, and he picked up another handful from the floor and put them on his desk. Esau peeked in the door and waved at him. Reverend Hoyt waved back, and Esau shuffled off to the sanctuary. Reverend Hoyt shut the door.

Behind his desk was a little clutter of sharp-edged glass and a large rock. There was a star-shaped hole above them in the glass doors. He took the message off the rock. It read, "And I saw a beast coming up out of the earth, and upon his head the names of blasphemy."

Reverend Hoyt cleaned up the broken glass and called the bishop. He read through his mail, keeping an eye out for her through the glass doors. She always came in the back way through the parking lot. His office was at the very end of the business wing of the church, the hardest thing to get to. It had been intended that way to give him as much privacy as possible. There had been a little courtyard with a crab apple tree in it outside the glass doors. Five years ago the courtyard and the crab tree had both been sacrificed to parking space, and now he had no privacy at all, but an excellent view of all comings and goings. It was the only way he knew what was going on in the church. From his office he could not hear a thing.

The bishop arrived on her bicycle. Her short curly gray hair had been swept back from her face by the wind. She was very tanned. She was wearing a light green pantsuit, but she had a black robe over her arm. He let her in through the glass doors.

"I wasn't sure if it was an official occasion or not. I decided I'd better bring something along in case you were going to drop another bombshell."

"I know," he sighed, sitting down behind his littered desk. "It was a stupid thing to do. Thank you for coming, Moira."

"You could have at least warned me. The first call I got was some reporter raving that the end was coming. I thought the Charlies had taken over again. Then some idiot called to ask what the church's position on pigs' souls was. It was another twenty minutes before I was able to find out exactly what you'd done. In the meantime, Will, I'm afraid I called you a number of highly uncharitable names." She reached out and patted his hand. "All of which I take back. How are you doing, dear?"

"I didn't intend to say anything until I'd decided what to do," he said thoughtfully. "I was going to call you this week about it. I told Natalie that when she brought Esau in."

"I knew it. This is Natalie Abreu's brainchild, isn't it? I thought I detected the hand of an assistant pastor in all this. Honestly, Will, they are all alike. Isn't there some way to keep them in seminary another ten years until they calm down a little? Causes and ideas and reforms and more causes. It wears me out."

"Mine is into choirs: youth choirs, boy choirs, madrigals, antiphonals, glees. We barely have time for the sermon, there are so many choirs. My church doesn't look like a church. It looks like a military parade. Battalions of colored robes trooping in and out, chanting responses." She paused. "There are times when I'd like to throttle him. Right now I'd like to throttle Natalie. Whatever put it into her head?"

Reverend Hoyt shook his head. "She's very fond of him."

"So she's been filling him with a lot of Bible stories and scripture. Has she been taking him to Sunday school?"

"Yes. First grade, I think."

"Well then, you can claim indoctrination, can't you? Say it wasn't his own idea but was forced on him?"

"I can say that about three-fourths of the Sunday school class. Moira, that's the problem. There isn't any argument that I can use against him that wouldn't apply to half the congregation. He's lonely. He needs a strong father figure. He likes the pretty robes and candles. Instinct. Conditioning. Sexual sublimation. Maybe those things are true of Esau, but they're true of a lot of people I've baptized, too. And I never said to them, 'Why do you really want to be baptized?'"

"He's doing it to please Natalie."

"Of course. And how many assistant pastors go to seminary for the same reason?" He paced the narrow space behind his desk. "I don't suppose there's anything in church law?"

"I looked. The Ecumenical Church is just a baby, Will. We barely have the organizational bylaws written down, let alone all the odds and ends. And twenty years is not enough time to build a base of precedent. I'm sorry, Will. I even went back to pre-unification law, thinking we might be able to borrow something obscure. But no luck."

The liberal churches had flirted with the idea of unification for more than twenty-five years without getting more accomplished than a few statements of good will. Then the Charismatics had declared the Rapture, and the churches had dived for cover right into the arms of ecumenism.

The fundamentalist Charismatic movement had gained strength all through the eighties. They had been committed to the imminent coming of the End, with its persecutions and Antichrist. On a sultry Tuesday in 1989 they had suddenly announced that the end was not only in sight, but here, and that all true Christians must unite to do battle against the Beast. The Beast was never specifically named, but most true Christians concluded he resided somewhere among the liberal churches. There was fervent prayer on Methodist front lawns. Young men ranted up the aisles of Episcopal churches during mass. A great many stained-glass windows, including

all but one of the Lazettis, were broken. A few churches burned.

The Rapture lost considerable momentum when two years later the skies still had not rolled back like a scroll and swallowed up the faithful, but the Charies were a force the newly born United Ecumenical Church refused to take lightly. She was a rather hodge-podge church, it was true, but she stood like a bulwark against the Charies.

"There wasn't anything?" Reverend Hoyt asked. "But the bishops can at least make a ruling, can't they?"

"The bishops have no authority over you in this matter. The United Church of Christ insisted on self-determination in matters within an individual church, including election of officers, distribution of communion, and baptism. It was the only way we could get them in," she finished apologetically.

"I've never understood that. They were all by themselves with the Charismatics moving in like wolves. They didn't have any choice. They had to come in. So how did they get a plumb like self-determination?"

"It worked both ways, remember. We could hardly stand by and let the Charies get them. Besides, everyone else had fiddled away their compromise points on trespassers versus debtors and translations of the Bible. You Presbyterians, as I recall, were determined to stick in the magic word 'predestination' in everywhere you could."

Reverend Hoyt had a feeling the purpose of this was to get him to smile. He smiled. "And what was it you Catholics nearly walked out over? Oh yes, grape juice."

"Will, the point is I cannot give you bishop's counsel on this. It's your problem. You're the one who'll have to come to a fair and rational decision."

"Fair and rational?" He picked up a handful of mail.

"With advice like this?"

"You asked for it, remember? Ranting from the pulpit about humility?"

"Listen to this: 'You can't baptize an ape. They don't have souls. One time I was in San Diego in the zoo there. We went to the ape house and right there, in front of the visitors and everything, were these two orangutans...' He looked up from the letter. "Here she apparently had some trouble deciding what words were most appropriate. Her pen has blotted." He continued to read. "...two orangutans doing it.' That's underlined. 'The worst of it is that they were laying there just enjoying it. So you see, even if you think they are nice sometimes...etc.' This, from a woman who's had three husbands and who knows how many 'little lapses', as she calls them. She says I can't baptize him on the grounds that he likes sex."

He flipped through more papers. "The deacons think it would have what they call a negative effect on the total amount of pledges. The ushers don't want tourists in here with cameras. Three men and nine women think baptizing him would somehow let loose his animal lusts and no one would be safe in the church alone."

He held up another letter triumphantly, this one written on pale pink rosebudded stationery. "You asked us Sunday what we thought about apes having souls. I think so. I like to sit in back because of my arthritis which is very bad. During the invocation there were three tots in front of me with their little hands folded in prayer and just inside the vestry door was your ape, with his head bowed and his hands folded too." He held up the paper. "My one ally. And she thinks it's cute to watch a full-grown orangutan fold his little hannies. How am I supposed to come to any kind of decision

with advice like this? Even Natalie's determined to make him into something he isn't. Clothes and good manners and standing up straight. And I'm supposed to decide!"

Moirs had listened to his rantings with a patient expression. Now she stood up. "That's right, Will. It is your decision, not Natalie's, not your congregation's, not the Charies'. You're supposed to decide."

He watched her to her bicycle through the star of broken glass. "Damn the Congregationalists!" he said under his breath.

He sorted all the mail into three piles of "for" and "against" and "wildly insane," then threw all of them in the wastebasket. He called in Natalie and Esau so he could give Esau the order to put up the protective plastic webbing over the big stained glass window. Natalie was alarmed. "What is it?" she asked when Esau had left with the storeroom key in his hand. "Have there been threats?"

He showed her the message from the rock, but didn't mention the letters. "I'll take him home again with me tonight," he said. "When does he have to go to Colorado Springs?"

"Tomorrow." She had fished a letter out of the wastebasket and was reading it. "We could cancel. They already know the situation," she said and then blushed.

"No. He's probably safer there than here." He let some of the tiredness creep into his voice.

"You aren't going to do it, are you?" Natalie said suddenly. "Because of a lot of creeps!" She slammed the letter down on his desk. "You're going to listen to them, aren't you? A lot of creeps who don't even know what a soul is, and you're going to let them tell you Esau doesn't have one!" She went to the door, the tails of the yellow stole flying. "Maybe I should just tell them to keep him tomorrow, since you don't want him." The door's slamming dislodged another splinter of glass.

REVEREND HOYT WENT TO THE South Denver Library and checked out books on apes and St. Augustine and sign language. He read them in his office until it was nearly dark outside. Then he went to get Esau. The protective webbing was up on the outside of the window. There was a ladder standing in the sanctuary. The window let in the dark blue evening light and the beginning stars.

Esau was sitting in one of the back pews, his short legs straight out in front of him on the velvet cushion. His arms hung down, palms out. He was resting. The dustcloth lay beside him. His wide face held no expression except the limpness of fatigue. His eyes were sad beyond anything Reverend Hoyt had ever seen.

When he saw Reverend Hoyt he climbed down off the pew quite readily. They walked to the parish house. Esau immediately went to find the cat.

The people from Cheyenne Mountain came quite early the next morning. Reverend Hoyt noticed their van in the parking lot. He saw Natalie walk Esau to the van. The young man from the center opened the door and said something to Natalie. She nodded and smiled rather shyly at him. Esau got in the back seat of the van. Natalie leaned in and hugged him goodbye. When the van drove off he was sitting looking out the window, his face impassive. Natalie did not look in Reverend Hoyt's direction.

They brought him back about noon the next day. Reverend Hoyt saw the van again, and shortly afterward Natalie

brought the young man to his office. She was dressed all in white, a childishly full surplice over a white robe. She looked like an angel in a Sunday school program. Pentecost must be over and Trinity begun. She was still subdued, more than the situation of having her friends argue for her would seem to merit. Reverend Hoyt wondered how often this same young man came for Esau.

"I thought you would like to know how things are going down at the Center, sir," the young man said briskly. "Esau passed his physical, although there is some question of whether he might need glasses. He has a slight case of astigmatism. Otherwise he is in excellent physical condition for a male of his age. His attitude toward the breeding program has also improved markedly in the past few months. Male orangs become rather solitary, neurotic beings as they mature, sometimes becoming very depressed. Esau was not, up until a few months ago, willing to breed at all. Now he participates regularly and has impregnated one female.

"What I came to say, sir, is that we feel Esau's job and the friends he has made here have made him a much happier and much better adjusted ape than he was before. You are to be congratulated. We would hate to see anything interfere with the emotional well-being he has achieved so far."

This is the best argument of all, Reverend Hoyt thought. A happy ape is a breeding ape. A baptized ape is a happy ape. Therefore . . .

"I understand," he said, looking at the young man. "I have been reading about orangutans, but I have questions. If you could give me some time this afternoon, I would appreciate it."

The young man glanced at his watch. Natalie looked uncomfortable. "Perhaps after the news conference. That lasts until . . ." He turned to Natalie. "Is it four o'clock, Reverend Abreu?"

She tried to smile. "Yes, four. We should be going. Reverend Hoyt, if you'd like to come. . ."

"I believe the bishop is coming later this afternoon, thank you." The young man took Natalie's arm. "After the press conference," Reverend Hoyt continued, "please have Esau put the ladder away. Tell him he does not need to use it."

"But . . ."

"Thank you, Reverend Abreu."

Natalie and her young man went to their news conference. He closed all the books he had checked out from the library and stacked them on the end of his desk. Then he put his head in his hands and tried to think.

"Where's Esau?" the bishop said when she came in.

"In the sanctuary, I suppose. He's supposed to be putting the webbing on the inside of the window."

"I didn't see him."

"Maybe Natalie took him with her to her press conference."

She sat down. "What have you decided?"

"I don't know. Yesterday I managed to convince myself he was one of the lower animals. This morning at three I woke from a dream in which he was ordained a saint. I am no closer to knowing what to do than I have ever been."

"Have you thought, as my archbishop would say who cannot forget his Baptist upbringing, about what our dear Lord would do?"

"You mean, 'Who is my neighbor?' And Jesus answering said, a certain man went down from Jerusalem to Jericho and fell among thieves." Esau said that, you know. When I asked him if he knew that God loved him he spelled out the word

Samaritan."

"I wonder," Moira said thoughtfully. "Did he mean the good Samaritan or . . ."

"The odd thing about it was that Natalie'd apparently taught him some kind of shorthand sign for good Samaritan, but he wouldn't use it. He kept spelling the word out, letter by letter."

"How is it that thou, being a Jew, askest drink of me, which am a woman of Samaria?"

"What?"

"John 4. That's what the Samaritan woman said to Jesus at the well."

"You know, one of the first apes they raised with human parents used to have to do this test where she sorted through a pile of pictures and separated the humans from the apes. She could do it perfectly, except for one mistake. She always put her own picture in the human pile." He stood up and went and stood at the doors. "I have thought all along that the reason he wanted to be baptized was because he didn't know he wasn't human. But he knows. He knows."

"Yes," said the bishop. "I think he does."

They walked together as far as the sanctuary. "I didn't want to ride my bicycle today," she said. "The reporters recognize it. What is that noise?"

It was a peculiar sound, a sort of heavy wheezing. Esau was sitting on the floor by one of the pews, his chest and head leaning on the seat. He was making the noise.

"Will," Moira said. "The ladder's down. I think he fell."

He whirled. The ladder lay full-length along the middle aisle. The plastic webbing was draped like fishnet over the front pews. He knelt by Esau, forgetting to sign. "Are you all right?"

Esau looked up at him. His eyes were clouded. There was blood and saliva under his nose and on his chin. "Go get Natalie," Reverend Hoyt said.

Natalie was in the door, looking like a childish angel. The young man from Cheyenne Mountain was with her. Her face went as white as her surplice. "Go call the doctor," she whispered to him, and was instantly on her knees by Esau. "Esau, are you all right? Is he sick?"

Reverend Hoyt did not know how to tell her. "I'm afraid he fell, Natalie."

"Off the ladder," she said immediately. "He fell off the ladder."

"Do you think we should lay him down, get his feet up?" Moira asked. "He must be in shock."

Reverend Hoyt lifted Esau's lip a little. The gums were grayish blue. Esau gave a little cough and spewed out a stream of frothy blood onto his chest.

"Oh," Natalie sobbed and put her hand over her mouth.

"I think he can breathe better in this position," Reverend Hoyt said. Moira got a blanket from somewhere. Reverend Hoyt put it over him, tucking it in at his shoulders. Natalie wiped his mouth and nose with the tail of her surplice. They waited for the doctor.

The doctor was a tall man with owlish glasses. Reverend Hoyt did not know him. He eased Esau onto his back on the floor and jammed the velvet pew cushion under his feet to prop them up. He looked at Esau's gums, as Reverend Hoyt had done, and took his pulse. He worked slowly and methodically to set up the intravenous equipment and shave a space on Esau's arm. It had a calming effect on Natalie. She leaned back on her heels, and some of the color came back to her cheeks. Reverend Hoyt could see that there was almost no

blood pressure. When the doctor inserted the needle and attached it to the plastic tube of sugar water, almost no blood hacked up into the tube.

He examined Esau gently, having Natalie sign questions to him. He did not answer. His breathing eased a little but hunched out of his nose. "We've got a peritoneal hernia here," the doctor said. "The organs have been pushed up into the rib cage and aren't giving the lungs enough space. He must have struck something when he fell." The corner of the pew. "He's very shocky. How long ago did this happen?"

"Before I came," Moira said, standing to the side. "I didn't see the ladder when I came." She collected herself. "Before three."

"We'll take him in as soon as we get a little hit more fluid in him." He turned to the young man. "Did you call the ambulance?"

The young man nodded. Esau coughed again. The blood was bright red and full of hubbles. The doctor said, "He's bleeding into the lungs." He adjusted the intravenous equipment slowly. "If you will all leave for just a few moments, I'll try to see if I can get him some additional air space in the lungs."

Natalie put both hands over her mouth and hiccuped a sigh.

"No," Reverend Hoyt said.

The doctor's look was unmistakable. You know what's coming. I am counting on you to be sensible and get these people out of here so they don't have to see it.

"No," he said again, more softly. "We would like to do something first, Natalie, go and get the baptismal bowl and my prayer book."

She stood up, wiping a bloody hand across her tears. She did not say anything as she went.

"Esau," Reverend Hoyt said. Please God, let me remember what few signs I know. "Esau God's child." He signed the foolish little salute for God. He held his hand out waist high for child. He had no idea how to show a possessive.

Esau's breathing was shallower. He raised his right hand a little and made a fist. "S—A—M—"

"No!" Reverend Hoyt jammed his two fingers against his thumb viciously. He shook his head vigorously. "No! Esau God's child!" The signs would not say what he wanted them to. He crossed his fists on his chest, the sign for love. Esau tried to make the same sign. He could not move his left arm at all. He looked at Reverend Hoyt and raised his right hand. He waved.

Natalie was standing over them, holding the bowl. She was shivering. He motioned her to kneel beside him and sign. He handed the bowl to Moira. "I baptize thee, Esau," he said steadily, and dipped his hand in the water, "in the name of the Father," he put his damp hand gently on the scraggly red head, "and of the Son, and of the Holy Ghost. Amen."

He stood up and looked at the bishop. He put his arm around Natalie and led her into the nave. After a few minutes the doctor called them back.

Esau was on his back, his arms flung out on either side, his little brown eyes open and unseeing. "He was just too shocky," the doctor said. "There was nothing but blood left in his lungs." He handed his card to Reverend Hoyt. "My number's on there. If there's anything I can do."

"Thank you," Reverend Hoyt said. "You've been very kind."

The young man from Cheyenne Mountain said, "The Center will arrange for disposal of the body."

Natalie was looking at the card. "No," she said. Her robe

was covered with blood, and damp. "No, thank you."

There was something in her tone the young man was afraid to question. He went out with the doctor.

Natalie sat down on the floor next to Esau's body. "He called a vet," she said. "He told me he'd help me get Esau baptized, and then he called a vet, like he was an animal!" She started to cry, reaching out and patting the limp palm of Esau's hand. "Oh, my dear friend," she said. "My dear friend."

Moira spent the night with Natalie. In the morning she brought her to Reverend Hoyt's office. "I'll talk to the reporters for you today," she said. She hugged them both goodbye.

Natalie sat down in the chair opposite Reverend Hoyt's desk. She was wearing a simple blue skirt and blouse. She held a wadded kleenex in her hands. "There isn't anything you can say to me, is there?" she asked quite steadily. "I ought to know, after a whole year of counselling everybody else." She sounded sad. "He was in pain, he *did* suffer a long time, it was my fault."

"I wasn't going to say any of those things to you, Natalie," he said gently.

She was twisting the kleenex, trying to get to the point where she could speak without crying. "Esau told me that you tucked him in when he stayed with you. He told me all about your cat, too." She was not going to make it. "I want to thank you... for being so kind to him. And for baptizing him, even though you didn't think he was a person." The tears came, little choking sobs. "I know that you did it for me." She stopped, her lips trembling.

He didn't know how to help her. "God chooses to believe that we have souls because He loves us," he said. "I think He loves Esau, too. I know we did."

"I'm glad it was me that killed him," Natalie said tearfully. "And not somebody that hated him, like the Charies or something. At least nobody hurt him on purpose."

"No," Reverend Hoyt said. "Not on purpose."

"He was a person, you know, not just an animal."

"I know," he said. He felt very sorry for her.

She stood up and wiped at her eyes with the sodden kleenex. "I'd better go see what can be done about the sanctuary." She looked totally and finally humiliated, standing there in the blue dress. Natalie the unquenchable quenched at last. He could not hear it.

"Natalie," he said, "I know you'll be busy, but if you have the time would you mind finding a white robe for Sunday for me to wear. I have been meaning to ask you. So many of the congregation have told me how much they thought your robes added to the service. And a stole perhaps. What is the color for Trinity Sunday?"

"White," she said promptly, and then looked ashamed. "White and gold."

—G—



What Gods Are These?

Jeffrey Carver

THE GODS HAVE NOT YET COME, but they will. I believe I am not alone here, though I don't know who is with me. Hanging cockeyed to my uncertain frame of reference, I stare at my Earth with sorrow and hate, wanting to curse it, to destroy it before the gods have it all. My visor fogs momentarily, as though to remind me of my helplessness. I am weightless: orbiting, falling... falling. Motionless...only the Earth moves. My ruined planet is a cool cheek bulging over my right shoulder, a delicate cloud and water ball, the stage of a hopeless drama against the house-darkness of space. On its dim nightside crescent, I see one or two cities burning, tiny embers. Slowly the planet drifts further around to the right, where it will pass behind me for a little while, behind the station. As I float with my boots hooked on a twisted bit of station girder and stare for hour after hour, I have the feeling that Earth is nothing more than an enormous sop, sweeping debris out of space, and grit...and mindless, gabbling spacemen.

No. It is the Saviors who will do that. They will not miss a one down there. And on their way back up they will find you here, whispers my soul. Find you waiting, helpless.

The thought sets me on edge. Hiding here behind the wrecked ferry shack on an arm of ruined Spacehome, my radio silent, whisper of spacesuit air for company. I pretend that I am safe, yes, from the preying Savior ships. They will find the others and take them, but I will be safe. And yet . . . to be left here uncaptured to die in peace—what a terrible, lonely end. I float, boots anchored, and watch that great ball against the black sink, now moving slowly out of my angle of view. The sun glares across the girder arm, white against the infinite black, and suddenly the endless, falling orbit of the station steals the breath out of my soul. Has the Earth turned an anesthetic green, or is that merely a distortion of my trembling, leapfrogging mind?

When I turn to follow the Earth, I see near its rim a short flare, a leaping spark: a Savior ship. Then it is gone, and I cannot say whether it was a ship climbing into orbit, or one diving into the filmy atmosphere—or, after all, nothing. Imagining marvels and dangers and possibilities has become my only pastime. Must I lose that, too, when they come?

In my Wooster, Ohio home, there was a dream I had, before I left again for the East—before panic blazed through the human race like fire through kindling. The dream was puzzling but clear, still vivid upon my awakening: *Humans filling serenely, by the thousands, through the wards and halls of a great, sighing ship of the stars . . . drinking liquid tranquility in cool draughts from a communal fount . . . peering, each in turn, through a fabulous viewing-lens at the stars drifting by, and at the star-beacon ahead which would be the new home, after readjustment and reeducation the Saviors, tall and fair and milky-faced, counseling, teaching the difficult arts of kindness and moral judgment . . . incorrigibles-defiantly realigned and then set to work aiding those less fortunate the grave joy of lying together in endless communal sleeping rows, mating at need, with that solemn bliss denied to one . . .*

The dream left me intrigued, but I became uneasy when it recurred, and continued recurring. And then I learned that Jim Pfeiffer, next door, and his wife and young child had also dreamed it; and then MacNamara, and then my cousin, Sue, and her husband—and the list grew, until the whole town rumbled about dreams of starships and "Saviors." Visions of the Saviors, tall and swift and fair, singing: "*Disturbed children, come this way, we come for you.*" Inevitably, there were outcries to the coming angels, the Coming of the Lord, the vindication of the Revelations—but I joined those who felt other feelings in the premonition, who listened for night sounds which turned out to be merely windrush, who jumped at footfalls which were only friends and lovers coming round, who woke from the recurring dream drenched with sweat. A dream of gods, or would-be gods. With (I was sure) many others, I felt a rising apprehension—but I had no family close by with whom to share my fear, and so I kept it to myself.

I came east, destined eventually for the Space Center, just days before the Saviors arrived and the skies erupted. But by then the location hardly mattered, because suddenly we were all—every human—foxes before the hounds. We were on our own; the armies had been swept away, the nuclear arsenals silenced, the lasers and missiles unmanned. Not a few cities (I heard) were burning. And through it all was the question asked of the astonished night: *Why?*

The view of Earth falls in the slow passage of hours blinked

away on the chronometer. Once the stunning magnificence of my homeworld caused me to cry; but now the treasure tarnishes, leaves a film of dust across my eyes. No longer can Earth console my gaze, nor can I console myself with thoughts of life gone by, of people and places loved, of deeds done and old joys and sorrows. All of that is behind me now. I have hardly moved, these last few hours—except for falling in silent clockwork turns about the Earth. The station tumbles slowly. Three times, night has crept over North America since I docked the shuttle; but, two days ago, the station's control system died of cut control wires.

Sabotage; therefore, I know I am not alone.

Whoever shares Spacehome with me does not wish to be seen, apparently, and though I have kept my eyes open, I have made no real effort to search. A ruined space station offers many hiding places, and if my companion wishes not to be found, I will respect his privacy. Strangely, I do not fear him (or her)—though I wonder at the motive for sabotage. What else could he be except a human, and what is one man's irrationality to me in this hour except, perhaps, a small comfort?

When sunlight has crept over northern Africa, over the auburn deserts, it is time for me to replenish my suit. Gently, I disengage my feet from the bent frame of the ferry dock, and with one hand on a girder I float around to face the shambles, gleaming in weightless sunshine. Torn shrouding flasks like golden kelp, still attached to the exploded side of the once-magnificent structure. The station has been smashed open like a pinata, leaving ruptured skin and a wreckage of cross-members, broken decks, ripped wiring and plumbing. A tiny plume issues from within the wreckage, fuel escaping from some slowly leaking valve or joint. This is how Randall and I, arriving, found the station—to all appearances lifeless, airless, several vacuum-frozen bodies floating inside which had not drifted off into space. I had known only one of the dead men; Randall had known all three. What could I say, how could I begrudge him his despair when he took his own life to join them, leaving me so alone? There was nothing for me to do but to follow him into death, or to radio Earth, if there was anyone left to hear, and to gnaw my microphone and clench my stiff fingers and sweat inside my stinking suit, waiting to be captured or to die. I listen to the station whisper to me, and wonder if I shall go mad.

Perhaps there remains some token of usefulness here, something with which to fight. There must be some way to fight. It is hard to believe that the Saviors were frightened of this station, but why else destroy it? Did they think it a threat to their plans? Why did they leave a lurking ghost, my companion? There are no answers—only nightmarish questions, the stuff of an endless, dark whispering orbit.

The shuttle orbiter, docked alongside, stares at me with somber eyes. With insufficient fuel and a faulty guidance platform, it will take me nowhere I wish to go; it is no longer my friend. I pass by it in the ferry cradle as I work my way, hand over hand, toward the station proper, irrationally but doggedly conserving reaction-jet fuel. Earth moves behind the body of the station; from over my left shoulder, the sun glares onto metalwork, spilling shadow in disconcerting patterns before me. I float to the undamaged side of the station, where the lock gapes open, perhaps for eternity.

The airlock comes alight at the touch of a switch; my saboteur has not struck here. So accustomed am I to the infinity of space that in the airlock I fight for a moment with claustrophobia. But I need what it offers: the resupply panel.

Hoses and cables plug into the appropriate fittings on my chestpack—oxygen first, a full and luxurious suit flush, cool and indecently pure for my stinking body. Now a battery swap, water and liquid lunch refill, waste bladder dump. The carbon dioxide scrubber I change with great care—all it takes here is a valve failure to turn me into a bloated stiff like the others. Finally I am finished, and good for another day, if I conserve. God, how I have come to hate the inside of this suit; but the only place I could shed it would be in the shuttle, and I avoid that shuttle, which stares at me, an estranged friend.

As I float back out of the airlock, I am startled by a rough giggle of static in my earphone. Twisting around, banging back against the airlock hatch, I wonder—have they come? But no, I realize, that was a real giggle, muffled by static. And there: I see my saboteur, a spacesuited figure drifting on a tether behind the telescope array. I stare for a moment, squinting because of the sun, and then I move toward the spaceman. I approach with some caution, because I assume the man to be mad. His face is a golden fishbowl, gazing blankly at me.

"Who are you?" I say, stopping just out of his reach. I think of shouting, but my voice comes out quietly, the three days of contained fury still remaining contained.

He giggles again and says something, but the words are smothered in static. I adjust my receiver, and the next time his voice is a little clearer.

"Nevermore," he says, and suddenly he rolls, like a man turning over on a mattress. I see my own golden-visored helmet framed in his. "Hah," he says, apparently enjoying himself. "Nevermore."

Something evil slips out of its containment in my soul, and I struggle hard to suppress an urge to assault this man and strangle him through that steel collar. What has brought me to such a pass, to have a lunatic for a dying-companion? Forcing myself to be calm, I say, staring at the blank golden face, "All right. I get it, mister. Nevermore—you're a raven, right? Shall I call you the Raven?"

He chokes, gasping, laughing. "Oh perfect!" His voice hisses in my helmet. "Raven! Yes, I am Raven!" He bursts into a coughing fit, and I grab a girder to support myself and club his helmet furiously with my fist. He falls silent. Then he says, mutely, "They will find us here. You know that—don't you, Grum?"

"Uh—" I say, my stomach reeling at his words. "Yes—I know." I swallow and glare at him. "And how the hell do you know my name?"

He answers with silence, and we look at each other, one fishbowl mirroring the other; and I think, yes, they are coming, and I must think of something to do about that.

THE SOUND OF FOOTSTEPS died away in the night. I had hesitated, to see if they were human feet, but it no longer mattered; they were gone. Everyone was gone from the city, it seemed—escaped or captured, mostly captured. Taken by the enemy. Taken. The word echoed in my mind as I crouched in darkness at the end of the second floor corridor and fumblingly counted the shells remaining in the revolver. Four—no, only three. Three shells? Yes. I didn't even know what building I occupied, but then, no building offered real cover. The handgun was hard and moist in my palm, in a hand which had never known such an instrument. My hand itched, tingled, clenched and unclenched the butt of the gun, palming it, fingering the grooved metal, seeking the feel of death in its hard form.

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Resisting an impulse to hurl the gun away, I grasped it carefully and curled my finger about its trigger.

The day before, the Saviors had come down again from the sky, sweeping up great numbers of people who had escaped their first assault. In this city, there were now only a few holdouts, and we would not be forgotten, I was sure. Exactly what was happening in the world at large, I couldn't say—there had been no radio since yesterday. But it was clear that the rest of the world would fall soon if it had not already; Savior ships had come down in every nation, and the lights moving in the night sky suggested that there was virtually no end to the Saviors' capabilities. Our forces had perhaps scratched the enemy's face, but the military ranks had been the first to vanish. I had heard no report of successful resistance. But I had heard the Saviors' voices: "Come with us, children, to a place where we will be safe! Come and worship your gods and learn to give up your quarrels! Come in peace!" Yes, I had heard the Saviors' voices—their god-talk—as much as I could stomach, and more.

After that, they took John and Cath, my friends in the city, and they nearly took me. So silently they had followed us in the streets, as we fled—they did not seem to need to see us or hear, they just knew where we were and where we were going, and they followed with impossible speed. Gangling figures, the Saviors followed as stealthily as cats with see-through eyes, their minds everywhere singing, "Come, dear disturbed ones, come and be made whole." They followed relentlessly, and each time they reached forth with sinuous arms another person shimmered and was gone.

I stumbled, and I sprawled in the street. Faster than I could recover, John whirled and fired upon our two pursuers, but a third appeared from nowhere and entangled Cath. She shrieked and clawed futilely, and I leaped to her aid, only to be flung aside by an arm I couldn't see. The pavement slammed into my face, and I came to a halt against a lamppost, stunned—and I witnessed the end, half aware, as though watching a movie from a graining, dying projector. John's gun cracked, and a Savior crumpled face-up under the streetlight. John turned to free Cath, but there was no clear shot for him, so he assaulted with his fists. In a moment he, too, was ensnared by the Savior's arms, and he struggled like an impaled fish, mad confusion in his eyes. Cath was beginning to glow, her face becoming translucent and yellow, and her plea soundless but clear: *Don't let them take me alive!* The gun cracked again, starring her forehead like glass, and the crystallized, dying Cath shimmered and vanished in the yellow transport glow. The gun clattered across the pavement, knocked away by an indignant Savior—and John glowed, shimmered, and was gone, too, to whatever Heaven awaited him. The Saviors gathered their fallen companion, murmuring, and together they disappeared.

A shocked, staggering survivor, I retrieved the gun and slipped on down the street, moving with the shadows. Eventually I took shelter where I could find it, in this abandoned apartment building. My adrenalin courage was gone, replaced by frightened exhaustion, and I rested without sleeping. There was food in darkened cupboards, and I wolfed down a sickening cold can of stew, washed with lukewarm orange juice. Grief was beyond my reach; my thoughts and emotions were locked up like a bound engine. The darkness ticked, rattled huskily with the breath of night. Vaguely, I wondered what was becoming of the rest of the world.

A pat-pat of footsteps sent me scurrying to huddle at the end of the hall, eyes moving constantly. In the predawn hour I

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made myself more familiar with John's gun, with the smooth darkly gleaming steel, the three cartridges. The second patter of feet set me into a crouch. I glared down the corridor, weapon aimed. A movement—I squeezed, the gun flashed, crack. Through smoke and momentary deafness, a pitiful cry tore my nerves, echoing down the corridor. A fallen, wounded enemy? I took an uncertain step forward. No—not an enemy. A dog, whimpering in agony. A hideous knot seized my throat, and tears rushed fiercely to my eyes, carrying the grief I had been unable to summon for my human friends. Creeping, stumbling forward, I tried to whisper comfortingly to the animal, and my voice cracked as pathetically as the dog's. His whimper quieted; he struggled to rise from the shadow, then fell. I could not leave him.

"Still, boy!" I cried hoarsely, trying to whisper. "Still!" Shakily, I knelt a few feet from him, aimed through blurry eyes, and fired again, crack. And again, crack.

Silence. Dark, hopeless silence.

Shuddering, I took my eyes from the stilled animal and slowly regained control of myself. The gun was empty. I had not wanted that; I'd meant to save the last bit of death for

have been scared of us, but there's nothing we could have done to them. Some saviors. Stumblebums."

"Sure," I say, sipping tiredly at my chin spigot. "Stumblebums. That's why they've had so much trouble knocking off the whole world. Raven, they've taken everyone—or almost everyone, and killed the rest."

"Didn't say they weren't big and tough. I saw part of their fleet in the scope—hell, they could clean up six planets, and maybe that's what they're doing. Maybe they're cleaning out the whole sector, taking six new races to their galactic happy home."

"So—"

"So, they're mad—"

"Yeah?"

"—'cause if they just wanted to conquer, or pillage, well, they could have done it a lot quicker, don't tell me they couldn't. But no—they aren't conquerors, they're saviors, they're here to save us from our sins, they're here to take us off and heal us!"

He is laughing so hard as he finishes that I think he must be in pain, maybe too much stale air in his suit, or he's



myself, if it became necessary.

I threw the gun, clattering, down the hallway. If I faced the enemy now, it would have to be with empty hands.

CRAZY AS BEDBUGS," Raven keeps saying. We are in Earth's shadow, now, and we've both tipped up our sunvisors so that we can converse eye to eye. His face appears scarred, unfamiliar; he says we have met before, up here at the station, but I cannot remember. I have learned how he knows my name, at least. It is stenciled on the front of my left shoulder: *Grumman Anderz, Pilot, Shuttle Team*. The tag on his own suit is much smaller, but I think it says, *Leonard Reevin*. I still don't remember him.

"Looney as lice," he says.

"Will you stop?" I explode. My head is ringing inside my helmet with his inanities. "They're crazy, yes—they left you here!"

"My point, exactly," he says, stretching his weightless limbs. "They're not thorough. They're supposed to be gods, but they're incompetent. Okay, they've got power. They're invincible—to us, anyway. So why hit us up here? They must

overheat. When he keeps laughing, I start to worry, and then suddenly he cuts off. Silent.

"Uh," I say, "yeah—but maybe they really are God, did you ever think about that?"

He snorts. Well, it was a stupid thing to say. But I add, not even meaning it myself, "You know, we could have used some help. We weren't doing so well by ourselves." He snorts again.

Dayside is creeping around the rim of Earth behind Raven. Flashy sunrise. We both flip down our sunvisors, and all either of us can see of the other is a curved golden mirror. He says, "Take you, Grum. You're here. Didn't hit you, didn't hit Space Center. Call that smart?"

I back up against a telescope shroud. "Yeah, well, they did hit the Center, they just didn't finish it. There were some people they missed, and the shuttle was already set to go, and it doesn't take that many people to launch, once she's ready."

Raven seems to be looking at me, but he doesn't speak. So I just go ahead, even if I'm only talking to myself. "We felt so damn helpless down there, and we were all going to be caught anyway, we thought we should do something. So we came to

rescue Spacehome." I chuckle sadly, then think of Randall's suicide after our arrival in the orbiter. Mist gets in the way of my vision, and it's not on my visor. "There won't be any more shuttles," I say, just talking to make conversation. The crescent of Earth is blazing in cinemascopes against space.

"Glad you came up?" Raven asks, without sarcasm.

I think for a minute and say, "Yes, all things considered." And it's true; at least I took some action. The Raven's voice is a comforting rasp in my fishbowl, what with the thought of those aliens storming our world down below. Isn't there something more we could be doing?

Earth moves around behind me, as the station tumbles in its orbit. "Hah," says Raven. "They meant to get the whole planetful of us, I'll bet, and they'll be lucky to get half the people alive, from what I heard before the radios cut out. I wonder what they do with dead people."

"Maybe we'll see," I mutter.

"I won't," he answers. At that moment, the sun rounds a corner of the station and glares full onto Raven's golden visor. He appears almost godlike himself in the stunning glow—a god awaiting a greater god, and not friendly about it. The shadow line moves off his left arm, across the telescope shroud, over my right arm, and then I, too, am floating in full, streaming sunlight. "I'll never see the inside of their ship, not from this side of death," he says. He pulls in his tether and starts to move toward the airlock. "They'll be here soon."

Following, I ask, "What are you going to do?" I ask with some hope, but not much, that he has a useful idea.

By the time he answers, we are at the lock, and Earth is growing to ripe fullness. "Only one thing I can think of," he says, and his voice sinks cold into my heart. "Gonna take a good deep breath of space, Grum, and if I live that long, I'm gonna spit in their eye. Also," he says, swinging into the open lock. "I am going to make an obscene gesture."

Man by the name of Reynolds gave me a lift much of the way south from D.C. He drove like a madman, figuring that safety lay in speed. The car radio hissed continuously, but he never gave up twirling the tuner in hopes of finding a broadcast. Sometimes he asked me to do it, and invariably he repeated the operation after I had finished. We heard nothing but static over the engine.

"They've gotten every city by now, I guess," he shouted over the noise. "But it'll take them a while to clean out the whole countryside, if they're doing it all over the world."

"Making fast work of it," I shouted back. "They must have thousands of ships. More than that."

Reynolds twisted his head to stare at me. He was a heavy, fat-browed man, and he squinted curiously at me. To my relief—we were flying down the highway—he turned his eyes back to the road.

"Me, I'm headed for the Georgia hills," he said. "I know some folks there, and I've got a feeling there's a pocket of resistance there that's going to last a while." He looked at me again, as though defying me to doubt the grounds for his belief. "You?"

"Trying to make it to the Cape," I said, gazing out the window. "If there's anything I can do, that's where it'll be. I'd rather be on the job, I guess."

"You work there?"

"Pilot."

He absorbed that silently for a moment, juggling the steering wheel back and forth just enough to scare me.

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"Maybe you know something about these things, then. Where are they from? *Why are they doing this?*" His expression was filled with pain and anger.

"I don't know," I said softly.

He didn't hear me. "What?"

I shook my head. What did we know, really? They were from the stars. They were gods of some kind, or they were playing God. If the dreams had meant anything, it seemed that in their minds they were capturing us for our own protection. I could not help being put in mind of some of the worst of our own "protective" institutions. Had the Saviors come to help us in our "sickness"—to take us and "heal" us under their own precepts? Or had they come to prey, regardless of what they had seen in us?

"I don't know anymore who's crazy," I said to Reynolds. What a way to fulfill my dreams of alien contact. What would my final choice be—if I had one? The end Cath had taken? I didn't want to die. I wasn't ready.

Countryside of forest and water-carved clay rushed by the window. What state was this—Georgia? The last time we'd stopped for gas (our fifth try, when we'd finally found a station with electricity to run the pumps), we'd been in South Carolina.

Reynolds pounded gloomily on the steering wheel. The Ford started to swerve, but he cleared his throat and steadied the car quickly. He frowned and concentrated hard on his driving, and I said nothing, though he had made me nervous. The radio hissed, a reminder of our isolation. Angrily, I snapped the damn thing off. I was suddenly in mind of the Savior who had been felled by John's bullet—his ruined face staring up from the streetlight, a sad, milky face without a trace of anger. The hideous creature, dying, had pitied us! The thought wrenched me with nausea. I poked tears out of my eyes and looked up.

"Watch out!" I snapped, with a stab at the windshield. A Savior spaceship was landing on the highway, and a car coming the other way had swerved across the median and was skidding across our lane, smoke and dust spurting from its tires. Reynolds hit the brakes, and we skidded, too, tires shrieking. I bounced back up, held by my seatbelt, and watched the other car burst through a guardrail and vanish over an embankment.

"Hah!" cried Reynolds, his hands white on the wheel. He floored the accelerator.

"No!" I cried—he had forgotten the spaceship—and now he braked again and we swerved onto the berm and skidded past the bright yellow ship. The wheels rumbled as he struggled to get us back onto the road, but it was hopeless—we were over the shoulder and bouncing in the weeds. The moment lasted forever, and I had time to be grateful that my seatbelt was snugly latched, and then an embankment rose and the world slammed into me and pinwheeled and finally halted, dizzily.

For a moment I was aware only of a crimson blur, and then my eyes focused somewhat, and I saw that we sat tilted, the car smoking and twisted. Reynolds's head was a bloody wreck in the shambles of the windshield. Hesitantly, I took his wrist: my own heart was thundering, but I could feel no pulse in Reynolds. I clicked out of my lap and shoulder harness, head spinning, heaved the door open with my shoulder, and lurched out of the car onto my knees.

Tall figures hurried toward me, crying into my mind: "Do not flee. Do not fear. We bring life!" I stumbled to my feet and ran, not knowing where, just into the woods, down into a

gully, tripping, sliding finally to rest in a jumbled gloom of branches and decaying leaves. Time passed, no time at all to me; and when I became aware again and made my way painfully back out to the road, both Reynolds's body and the Savors were gone. I brooded, shaking, and walked south along the road.

The rest of the trip blurred, played in some disjointed time sense. A driver stopped, hurtled south with me, and other motorists took the relay, and then I took a car. Only after I reached the Cape did my eyes and mind focus to a common range. The Space Center was in chaos, damaged but alive. A shuttle was still intact, fueled though not topped off, and there was enough organization left to try to put the bird up. Probably there was no point in it; but everyone was desperate to take some action, however futile, and Commander Randall couldn't have been happier to see a second pilot, groggy and thrashed about though I was. So we were going. Perhaps we could do nothing but make a last stand with the crew of Spacehome, in orbit—but if that was our only option, then that was what we would do.

Only... we were too late. Except for Raven, the last stand had already been made here. And by the time we arrived here, Space Center was no longer answering on the radio.

WE PROWL THROUGH THE STATION, through what's left of the control and instrumentation room. I am thinking about various ways of dying, and deciding that Raven's plan is not to my liking, though I wish him well in it.

"Raven," I say, "why are you still alive? Why didn't they get you the first time?"

Raven is off in a corner, fooling with the radar. For a moment, I think he's going to ignore my question, but then he says, "Missed the whole fight. I was on a scooter, couple of kilometers away, when they hit. Taking pictures. Something told me to keep quiet, keep my thrusters off—and I was right, they left without paying any attention to me." He says all this without looking away from the radar.

"Funny," I say, "that was just how I missed getting caught. I was sort of stunned, two different times when they might have gotten me, but they didn't get me, they just left." And I go silent for a few minutes, thinking about that. Could be that that observation would be useful to someone who was alive and captive. But that isn't important to me now—what's important is what am I going to do this time, not what did they do last time. Don't let them take you alive, I think. But suicide has never appealed to me, in any form, and my heart doesn't accept it even now. Is it less honorable than giving myself up for enslavement?

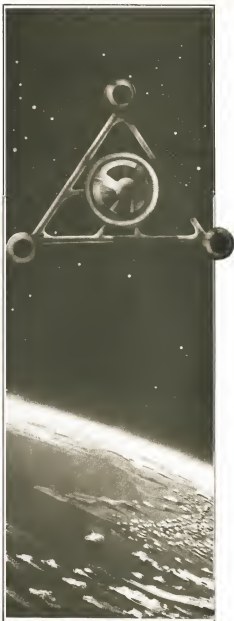
Raven calls to me. He has his helmet face pressed to the padded eyepiece of one of the telescopes. "Look," he says, checking the radarscope, checking the telescope again. "Look." There is casual urgency in his voice.

I float over and look. At first I have trouble situating myself in front of the eyepiece, but then I peer in and see it: a bright point of light, brighter than the stars. I cannot tell if it's moving.

"It's accelerating," Raven says, looking at the figures checked out by the radar computer. "Too fast for a shuttle—could be aiming to match our orbit."

With a sinking feeling, I look up at him, then look back into the scope; but now the station has tumbled too far, and the telescope has swiveled to its limit.

They're coming, then. It's real, it's happening; time is



almost up. The evidence presented to my eye steeples slowly to the core of my mind, swells into my tissues like heady wine, bubbles downward like a fiery probe into my sternum. I grasp for support on a panel but slide away like a novice spaceman, tumbling, choking back nausea, knotting my stomach muscles to contain a spitting primitive animal which claws for freedom. Thoughts rearrange themselves like bits of sand on a helplessly sliding cliff. I finally bring myself to a stop, facing Raven upside-down. In the half-light, he looks like a costumed Savior reaching to take me.

"What are you going to do?" he hisses.

The question shimmers, dies. *Yes, what?* Will I be taken by these madmen who think themselves gods, or will I deny them their victory, as Raven plans to do? No choice seems acceptable. A chronometer ticks in the back of my mind: how many hours, how many minutes? They are accelerating toward us, *and they know we are here.* I move away from the telescope and seek the airlock; whatever else, when they arrive, I want to be outside to face them in the open clarity of space.

Stopping in the airlock, I notice the rack of signal rockets behind a protective window. I pry open the window and run a gloved hand over the launcher tubes. "Raven—"

Instead of finishing the question, I remove two of the rockets, perched in their bazooka-launchers. Trigger-fired, I release them to hang weightless, while I think this through; I haven't much time. The rockets would make excellent weapons of self-destruction if I butted their exhaust tubes against my stomach before firing them. Perhaps I could treat the Savors to a show of fireworks when I die. Or—

Though quaking with contained excitement, knowing I should hurry outside to greet the enemy, I stay where I am, studying the rockets, feeling the grip of the handles—very much like the grip of a revolver. Last time I was given a weapon, I failed to do anything except murder a lonely dog.

Raven appears in the airlock and looks at me holding the two rockets. "Do it!" he says, and hurries outside through the open exit port. He drifts out of my sight, a silent fish in an infinite black sea.

He's right. I've got to do it. I grip the two launchers and follow him outside.

"Hurry," his voice hisses in my ear. Can they be coming already? I turn and find him, waiting among the stars.

Earth has grown ripe with color, lucid ocean blue and wisped cloud white. She is round and beautiful, and I grieve for her. I want to make the best exit for her I can manage. How many minutes away are they, now, those benevolent Savors? My suit whispers air to me hoarsely, as though knowing that its usefulness to me grows short. My radio mutters static, a death rattle. Shadow envelops us as the sun passes behind the tumbling station.

The vast planet, wheeling slowly over our heads on this crippled carousel, eventually wanes into darkness. The sun flares blue, gold, crimson at the horizon and vanishes. Our last sunset, perhaps—a final farewell to our vigil. How many years will Spacehome circle, silent and empty, before blazing its own farewell in the atmosphere? I practice holding the rockets in various positions: over the shoulder as they were meant to be fired, under the arms in what seems like a dramatic gunslinger pose, and butted directly against my body, where the blasts would make a pretty crater of my abdomen. Raven watches, not asking which way I am going to do it. I cannot decide. Do I want to die, or do I want to see their faces when I put on my show?

Jeffrey Carver

"Raven, their transport beam. Do you think—?" The beam seemed to freeze people and things; would it freeze rockets in motion?

Raven says nothing. No way to know. I'll just have to try.

Morning. Daylight over Asia, and it seems that perhaps the last sunset was not, after all, our last. *Why are they taking so long?* Raven and I do not talk, but our silence reverberates like muffled shouts, like children giggling in the dark.

A spark, that was a spark!

No. I have seen many things I thought were sparks.

The sun flashes, splinters, and fades: another sunset. I sweat coldly for fear that if I see another I may weary of sunsets. No! Darkness—and a stab of light drills into my retinas like a welder's arc. A spaceship drops into view like a powdering airplane and brakes magically, a gleaming yellow spaceship with white trim, mockingly cheerful. I turn to keep facing it, but the station is tumbling, twisting away.

"Back against the wall!" cries Raven. I think he is howling a contemptuous laugh—but no!—it is a command, and I obey wedging myself with my back against the station's hull. The stars wheel slowly, a sparkling panorama of Cheshire-cat grins, watching the carousel.

In despair, I stick the butts of the rocket tubes squarely in my gut and disengage the safeties for firing. I don't want to blink; I must time my squeeze at the precise moment of paralysis.

The ship seems enormous as it wheels into view, a hundred meters away. It turns to spot us, and its antennas glitter and emits a smudgy light, which moves . . . slowly.

"Give 'em hell, Grum!" howls Raven, and out of the corner of my eye I see his right fist jerk up, middle finger stabbing—and I think there is a puff of air which is his life fleeing, but I dare not avert my gaze to see if he's spit before dying—*Good-bye, Raven!*

Something twists in my gut, and with no conscious thought I change my mind. I jerk the launchers away from my stomach and wedge them under my arms, holding them tight with both elbows, fingers wrapped around the triggers. The light blossoms out from the ship, a crinkling yellow translucence, enveloping me in its glow. My eyes shimmer and smoke inside my skull, and my fingers squeeze the two triggers hard. . . .

I am aware of vibration and spurring fire in both launchers, as time freezes . . . becomes discontinuous, then crystalline . . . space as I know it no longer surrounds me, and in its place is a flint silvery gray sphere, room-sized, and time unfreezes—

. . . the tubes vomit fire, and the signal rockets streak out and explode with blinding white light on the far wall. Searing particles ricochet in a sizzling hail, and through the pyrotechnics I see the figures of Savors dancing and falling like shadows, and then the rain spatters to a halt, and I am aware through the smoke and confusion that I have burned at least half a dozen holes through my suit and into my skin. For a moment, I feel as though I'm going to pass out, but as I stumble and fall backwards I fight to maintain consciousness for another minute. The Savors, those I didn't hit, are scurrying forward to capture me, *and I want to see their faces before they take me.* Sinuous arms snake out to grasp me, and milky faces, scored with pity—and anger?—peer at me; and for that one moment I know I haven't lost, not altogether.

Raven, are you there? I'll find out for both of us what future they have planned.

But we got them, didn't we? And some damn day I'll get them again.

—G—

GALILEO 47



In The Idiom Of The Old School

David J. Schow

THE ARTHRITIS WAS A WHISPER, a twinge, and enough of an annoyance for Sergei Rudolf Cardwell to forsake his Olympia manual in favor of another cup of coffee, with cinnamon, from the small steel dripulator on the stove. Ever since his first typewriter—a war-weary Underwood salvaged from a *Chicago Tribune* auction when he was ten—he had pecked with index-fingers only through numberless reams of bond and seconds and impotent carbons, never bothering to learn proper professional typing style. The kids who had been regimented into acceptable finger placement, typing rhythm and “stroking” Fern had wound up jaunting through life as stenos or CPAs, while Sergei—or “S. Rudolf Cardwell”—had invested his last sixty-five-odd years in becoming what the esteemed editor of *Spellbinding Sword and Sorcery* in his latest issue had termed “a peerless dream-sculptor and Grand Master Fantasist.”

“And Thrive on Saturday,” a novelette Sergei had ticked out six months earlier, was prominently plugged on the cover of that same issue of *SS&S* in 24-point orange letters. The story’s splash page featured an evocative scratchboarded illo

Larry Rian

by Bruno Dunhill, winner of a pair of pro art Hugos, and the usual attendant editorial enthusiasm, to wit: "... and we are proud to showcase the first new fiction in over half a year from S. Rudolf Cardwell."

The wobbly kitchen table was piled high with work-paper: various half-finished manuscripts, vagrant outlines, mail—even fan mail, a steady influx that he tried to acknowledge even though such frivolous writing sucked greedily at the time available for other projects—review paperbacks and albums, business communiques demanding attention, an occasional check, and a more frequent bill past due were all parts of the dog-eared, haphazardly heaped cargo balancing the end of the table not occupied by the Olympia and its accoutrements.

From the living-room end of the fourth floor efficiency, a Handel flute sonata burred from a table radio. Sergei's goldfish, Somesuch and Whichaway, flittered listlessly in their murky bowl, awaiting lunch.

More paper. The wall opposite the bed-couch was lined thickly with paperbacks on cinderblocked shelving. Hard and soft editions were stuffed into available openings; they were pyramided on the carpet, racked on the dusty windowsills, and ranked and filed in double and triple rows along the baseboard. Under the table they were boxed; on top, stacked, spine-out for identification beside the radio and beneath the fishbowl. Other pillars snaked up the walls as far as balance, leverage, and individual centers of gravity would allow. Besides, they were practical insulation.

From this circus of disarray and bowed shelves issued fictions and mind-flights, twists and turnabouts infinite in category and style—original, erudite, and personal. Sergei flexed the fingers of the offending hand. They were spidery and delicate, bowed in traverse from knuckle to nail from decades of typewriter punishment. The veins lacing across the backs of his hands were ropey and interwoven; Sergei contemplated them as he sipped warmth from a glazed mug.

On the kitchen floor, radiating out from the position of the chair, was more paper—balled, crumpled, and rejected. The stack of polished typescript beside the Olympia was frustratingly thin. *Damn story.*

He had to be careful. The September issue of *Ultima SF* had run two letters lambasting his story in the July issue, "Follower's Badge," and one of those had accused him of "riding on his past glory" (to which the editor retaliated by inserting "sic"). If anything, the readership of *FancyFree*, a respectable gentleman's quarterly to which he planned to send the in-work piece, a slightly racy fantasy tentatively titled "Unicorness," were more discriminate than the convention-going, letterhacking fans who regularly perused *Ultima SF*—which, until a write-in campaign, had been *Ultima Sci-Fi*. It wasn't really a prestige market, but it paid twice *SS&S's* niggling three-and-a-half per word. As a contrast to the penny-haggling of the digests, *FancyFree* remunerated handsomely, and *this* story had been by special request of the editor.

The second draft had progressed agreeably until snagging on page ten with the introduction of a new character, a feisty, hip, ectoplasm intended to echo the negative conscience of the principal character, thereby compelling him toward the fate awaiting him at the tale's conclusion. As the spirit developed in Sergei's mind, it became an irresistible interim addition too heady to omit. Working it into the weave of the established story, however, was proving to be a headache. Sergei virtually battled the machine, chicken-picking his way

through forty-five minutes of false starts and wrong trails until the pain in his hands had flared.

Billy Waites, a fan who had ferreted out Sergei's address and visited periodically, had once offered the opinion that Sergei was overreactive to personal criticism—pans targeted directly at him or his stories, by name—and Sergei had countered that even so, he owed it to himself to try and please all of his readers. Billy's flat rejection of that as altruistic-but-impossible was met with a wan and patient smile. Sergei could always pull rank in the form of the clutch of literary awards his career had garnered. He respected Billy as young and bright, but intolerant.

Clustered on a low, broad particle-board shelf in the front room were the trophies—some tarnished, others dulled and nicked by the ravages of browsing and relocation through the ages, all patined in grey dust. Prominent among them were four Hugos (in the back, only the pointed chrome noses of the rockets showing), six Nebula Awards (two knocked sidewise, one missing a triangular chunk of lucite), three Silver Spheres, a Galactica, a Cosmos, two Ray Bradbury Golden Apples, and a plated plaque denoting membership in the Scribes, an elite offshoot of the Fantasy Writers of America. Other accolades culled from over half a century of Sergei's craft were spread around the apartment in squat piles of frames, or sandwiched between bookpages, or consigned to the higher shelves or file drawers. There were a lot. They were also a crutch to help Sergei justify his excessive dwelling on the proper rendering of the little smart-assed spirit that had today bottlenecked "Unicorness." He had to be believable, for belief was everything. It was just a matter of adequate research and experienced, thought-out execution. It wasted a lot of time.

To the letter, the paper was exactly as Sergei had abandoned it in the Olympia, midway in a sentence which he had decided to axe in favor of more dialogue. The page joined its minions on the floor and Sergei brought the story mechanically back to the quitting point. The ectoplasm had just made his first appearance on the shoulder of Tholiph Gottlieb, main character, as Gottlieb was attempting to coerce a busy astrologist (Cancer-Leo, cusped) into his Valley Forge waterbed on the virtue of their mutual stellar compatibility. The abrupt materialization of the grinning gnome put a thorough douse on the lady's dinner-show-and-brandied-induced passion, and the front door through which she had fled gaped open as Gottlieb began his tirade.

"The creature leaned on his left ear, and Gottlieb belowered..."

Sergei backpacked with a light curse, Bad sign, a typo right from the start. *More Coffee.* Without correcting, he rose with the mug in his hand.

The pain flashed through sharply, like a kick in the chest from a mule. Sergei had felt the warning prod, like that deadily instant between smashing your thumb with a hammer and feeling the result, but could do nothing. He gasped and recoiled, clutching at his chest as his coffee mug hit the linoleum and exploded into porcelain chunks. Sucking thick gulps of air, he collapsed back into the chair as the room carouselled around his head and giddy purple darkness engulfed his vision. *Too late again, damn, damn*... Like a dunk-bird toy he fell face-forward into the typewriter, abrading a scarlet line across his forehead. His nose typed a y so hard that it left a double impression. In five minutes he was totally, clinically, and irrevocably dead.

His body was not discovered for three days. Sergei's

GOD DAMN IT!" A paperback seventeenth printing of S. Rudolf Cardwell's *Delusions and Succubi* in 20/20 somersaulted, pages rattling, through the air and struck a Crosse-framed onesheet from *Mad Love* mounted on the far bedroom wall. It yawed precariously and then detached itself from the wall, smacking the carpet with a clattering of broken glass.

Martin Glass, standing naked in the center of the room near the foot of a kingsized Posturepedic, sighed heavily and pinched his eyes together. The title of the book had mocked him from the headboard rack, and with a choking noise he had leapt from the bed and hurled it across the room. He stood, legs spread in a gunfighter stance, panting shallowly.

Cowering under the sheets, only her eyes, forehead, and a few trailings of golden hair vulnerable, Sandy Patterson was siphoning off shock for anger.

"For chrissakes, Martin, most people would be . . . sitting around anguishing about life and death and mortality, but not you! God, not you!" She was nearly spitting. "You indulge your bloody moods too much!"

"It's my stuff, I will break it if I want to," he mumbled, low and ominously, with a deadly spacing between the words. Teeth clenched, his chin hovered near his chest; his breathing was evening out. The excruciating and touchy process of damping the hairtrigger was in motion.

Sandy wrapped herself in the sheet and approached Martin with determination. He felt her hand light on his shoulder, from behind.

Martin Glass looked like a thin, nervous bird, handsome in a used, recycled way, with a whipped tussle of chestnut-colored hair, a slightly pointed nose and a set of blazing green ball-bearing eyes usually shielded behind gold-rimmed spectacles—but not in bed. His eyes were misty; Sandy's intrusion into his protective shell was more by design than he would ever admit. His armor flickered and he softened.

Sandy orbited around until she faced him, holding his shoulders. She could see her boots near the nightstand; they would have put her eye to eye if Martin would only look up. "I want you to tell me," she said. He would now, anyway.

"He . . . I . . . wrote a letter to him. When I was fourteen. Fourteen, for godsakes. He answered it. I must have read it a hundred times. A thousand words a day, he said, or two thousand, or whatever I could handle, and I started cranking it out. I sent him awful stories. I pestered him with questions, letter after letter and he kept on writing back . . ." His voice was barely audible, and the pauses were tortuous.

"I met him, finally, at a WorldCon—a convention, the one where they give out the Hugo awards—I met him and we went to his room and just talked, and talked until very late . . . and that was the one where he won the award, for a story called 'Attunement,' and when I switched, years, years later and wrote an sf novel—I won the award and he congratulated me!" Another pause. "Do you care about this shit?"

He fidgeted, but she steered him toward the sofa against the dark brick wall. "Sit down. Get ahead of yourself. You can't just crack up like this." Of course he could, but he won't.

Rationality was returning. "It's not just that he died, I mean, everybody dies, for godsake, I'm very cool, this just racks me away so totally because I know . . ."

"What?" Keep him going; make him think.

"Nothing."

"Martin, come on, cough up."

"It's stupid."

"This is stupid!"

"Sergei Cardwell was murdered."

It took Sandy completely off-guard. "Wha! You . . . can't be serious; get ahead of yourself, love!" Damn him.

Martin's palms were up in defense. "Now just wait, wait, wait a minute, I know how melodramatic that sounds. I went up to that rathole apartment he's been living in for the past six years—I saw that place!" Sandy's eyes now betrayed betrayal as Martin continued. "He'd been working on a new story and there was trashed paper all over the place. It was a new story . . . he'd obviously gotten stuck—made something like thirty or forty tries at working a character into the story and nothing seemed to please him. Know why?"

Sandy was lost, but Martin seemed to be inching back into a more recognizable persona of hyper-talk and outrage so she let him go on. His eyes regained their fire, dissipating the wetness, and he started to gesticulate with mounting fervor, his voice running up and down the scale.

"That year, when he won the Hugo for 'Attunement,' he did another story—a novella, called 'The Hectophobe,'—that was so roundly patted he didn't produce anything for almost a year. And when he finally did, there were tons of 'welcome back' editorials and praise, and the first goddamn thing he submitted to anybody got nominated for a Nebula . . . er, award. I'm convinced if you graphed his career in terms of awards and hibernation you'd see peaks so evenly spaced they'd look machine-drawn.

"Sergei was shouted down by some asshole at a con where he was a guest of honor last year. That one pusillanimous little jerk in the audience freaked him so badly that he actually cancelled out of some other appearances. He wasn't a *personality* or anything, for chrissakes, but people with his talent shouldn't be expected to tap dance every time they hit a stage. I mean, if I get insulted or something I can always toss it back"—a smile from Sandy, at that—"but Sergei was very sensitive; frail, almost. He wanted to please anyone who'd honor his work by reading it—which isn't such a bad attitude, but it's not very pro-survival, considering all the halfwits out there constantly scrawling letters saying *this* story isn't as good as *that* story. And the Freudians and brainless critics reading so much nonexistent bullshit into his stories, and—"

"Wait. Whoa. Hang on!" Now Sandy's hands were up. The sheet fell away but neither of them took notice. "Are you saying Sergei was so self-conscious that he couldn't take a little criticism? Or put up with the kind of nutso that fantasy-writing attracts? Don't forget, I've been to some of those conventions—with you, remember? Whatever happened to good old writer's egomania?"

"Yeah, yeah. . . look, what I'm saying is that he usually took those attacks—inspired or not—seriously. He let it cripple his writing, something I could never allow, which is why it seems so weird. If someone trying to impress a bunch of yucks at a party said, 'Geez, this here story don't have none of them Eight Prime Tenets of Fiction,' then he'd go out of his mind trying to make his next story conform to the eight goddamn tenets of—"

"What about all his awards, then?"

To Martin it was like parroting gospel: "You can rape and dilute or muck up writing forever, but if there's a true talent behind it, it'll come gold once in a while no matter what. The talent, he had in bundles. Besides, following each one of

those awards was a long dead period, like I said before—because what do you do after you've won the Oscar, the Pulitzer, the Nobel Peace Prize? That's what those were to him; he confined almost all of his writing to one field. No story is as good to a fan as an award-winner, and when he thought he couldn't go any higher, he holed up and faded out so he could make another comeback! Where do you go from up?"

"Where did you go, superstar?" sneered Sandy. "Those aren't exactly paperweights weighing down that shelf in the office!"

"Do I have to quote Shaw—to you—on titles? I'm not all that convulsed by it one way or another." It sounded simple enough.

"But Sergei was."

"Exactly? At last you've seen the point!"

"Point..." Sandy shook her head, almost comically. Puppy with fleas. Too cute.

"The cumulative effect, love—migod, I just thought of this—all those years of bad criticism and attacks and worrying jelled, to the point where he had a coronary over a minor plot twist just because he couldn't figure a way to make it acceptable to all of his readers—"

"You're nuts!" Sandy almost regretted the exclamation. "That's absolute—"

"Horse-puker, I know. I told you, I read his reject sheets! Any one of them would've been fine. But, *But*, he was so much more aware that his readers would go down on the story like a two-dollar hooker on a sailor!"—Sandy rolled her eyes—"looking for symbolic garbage and double meanings and crap that just wasn't there, that he couldn't even progress without wondering if every single word was a wrong choice. I'd seize up, too." Pause, after which he looked up at Sandy. *Beautiful lady, why in hell do you tolerate this?* "Do you feel like a shrink, today?"

"It's okay."

"If they'd just left him the hell alone... and let him write instead of putting everything under a goddamn petty magnifying glass."

"Martin, nobody reads that much into a story," Sandy offered, sympathetically. "It's like searching for a codex in the page numbers." She vaguely sensed that she had made an error, and the impression was verified when Martin grinned wide for the first time that morning.

"Up. Precisely, my dear. My friend Sergei was murdered. By his readers." His jaw tightened—cable beneath the cuddliness. "I can't prove it, but I'm gonna do something about it. It shouldn't have happened, not to him." A bladed glint stoked itself in his eyes, and Sandy caught it. Something was already brewing, damn him and his argument!

She spoke carefully. "Never. Never in a hundred, thousand, trillion years are you ever going to convince me."

Martin shrugged and hesitated, forsaking his planned retort. It was infuriating—whatever he had in mind was now a secret, already submerged as Martin shifted his manner to a back-to-business undertone. It fascinated Sandy to watch him, to observe the emotions as they flowed through him in waves, none lasting long enough to be catalogued or pinned down. He was a bloody slot machine, a fighter who knew the advantage lay in moving so swiftly that the perpetually rotating feelings could never be arrested or attacked. The personality was fluid, and leaked clues only through the eyes and their rapid jack-rabbiting from expression to expression.

"I'm glad you came," he admitted, concentrating on a nondescript part of the sofa between them. "What happened

shook me up. I still am. I needed somebody to hang onto and cry for awhile."

She smiled again. Martin Glass, celebrated author, scribe of bestsellers, financially respectable literary gadfly and *bon vivant*. And *back-naked crybaby*. I love ya.

She tilted his head up with a finger, but before she could lean forward to brush his lips he caught up the hand and kissed it lightly. "I've got to get out of here for a bit," he said. "Want some coffee, someplace?"

"Yeah." She hooked her hand around his neck and pulled him into the kiss. She stood and re-draped the sheet around-and-over, toga-style. "We should get dressed, first, though."

"Why?" Martin countered. "Think what a splash we'd make with the lunch hour crowd." His pants came sailing at his head. *Beautiful lady*.

But no fool, Martin knew—he realized that Sandy had let the topic go instead of tracking it with her journalistic fervor, and therefore he could only give himself partial credit for steering her off the subject. He liked to think of himself as a good manipulator, so he could let the plot churning away in his cerebrum go undiscussed with anyone—even Sandy—for a very long time. Sandy knew she had been railroaded, though—she just didn't care now, because Martin was of more immediate importance—and she would run him to earth in due course and with Grim Reaper inevitability. She had many talents.

The Audi squatted in the carport, like a mutant HO racer. As he climbed in, Martin tried not to appear too smug through his residual grief. The sensation would pass, he knew, and be supplanted soon enough. It always was.

BECAUSE OF THE CONDOR HOTEL'S proximity to a local 7-Up factory, the area's regional science fiction convention had, three years earlier, been saddled with the appellation "BottleCon," which endured both annual derision and several colorful redefinitions of the term by disgruntled fans.

BottleCon 4 was out-Bedlamming Bedlam, and it had not as yet even officially opened.

Norman Shacklee, no less than five homemade and badly printed badges clicking together and fraying the material of his left lapel, shambled across the triple-wide main meeting room of the Condor toward a service access. The room was lined with brutalized display tables, each showcasing nought but a creased and crumpled length of hotel-issue tablecloth.

Shacklee's face was deeply rutted, and belied the mileage of his forty-seven years. It supported a salt-and-pepper mustache and a pair of thick, horn-rimmed specs with a modified Band-Aid maintaining a precarious, gummy grip on the left eyepiece. He walked with a loping, hunched-over gait and his head looked as though it sprang neckless, directly from his shoulders, to hang like a goggled foglamp well in advance of the torso, instead of above it. He had the look of the eternally oppressed complainer, and if the foglamp sought anything at all through the maze of Shacklee's existence, it was the satisfaction that he'd run a ramdoolah past some fool and gotten away with it.

Three floors below him, on a sub-basement loading dock, surrounded by a radiating sea of stalled autos, overpiled dollies, padlocked trunks, ratty cardboard boxes and sweat-drenched T-shirts, a lynch mob waited. The hucksters' assault on the empty dealer's room above had been foiled by a faulty freight elevator, and the muttered conversation for the most part concerned various proposed rearrangements of the

Martin Glass, standing naked in the center of the room, sighed heavily and pinched his eyes together. He stood, legs spread in a gunfighter stance, panting shallowly.

main components of the *corpus* of one Norm Shacklee, conventioner, entrepreneur, and wicker-basket candidate.

On the ground level of the Condor—a healthy two floors above the dealers—a panic of oily, porous noses pressed against the breath-steamed glass plates of a row of entrance doorways, where over seven hundred earlybird, fully-fledged convention-goers (each of whom would fork over a record ten dollars per day to Shacklee's accomplices to ensure their exalted status as "attending members") faced-off with four terrified gophers who had been marooned by Shacklee with the thankless task of keeping members out of the main meeting area—the Pinnacle Lobby in the Condor's west wing—until the pieces of the *Star Trek* bridge set could be trucked clear of the heavy traffic-flow areas. Behind them, other gophers courted hernias under the weight of the bridge set's individual all-plywood sections, since the Condor's entire complement of trucks and dollies, along with all of the bell-captain's luggage carts, were stranded in the sub-basement, laden with several tons of brittle and brown paperbacks, slick sf magazines, Frank Frazetta calendars, movie posters, photo buttons, galaxy wargames, Mr. Spock T-shirts, Middle-Earth maps, alien jewelry, overpriced pulps and a disaster-area of similar vendables of both the endorsed and under-the-table varieties.

Upstairs in Room 503—or "Room 101" to anybody with an FM unit—a suite that was the convention's top secret headquarters, a crewcut man named Ray Milburn was fuming silently, having just delivered a hastily composed ultimatum concerning a U-Haul van illegally parked in front of the Condor and containing the entire film program of BottleCon: Either he was paid in cash, in full, pronto, or the van got driven back to New York or off the nearest cliff. Since the films had been prematurely promised—in a program booklet destined to issue from the printers on Day Three of the four-day event—capitulation on Shacklee's part was imminent. The projectionists could be paid later, he rationalized in a quick reshuffle of priorities. *By check.*

Trundling down the security stairway, Shacklee made for the sub-basement. *James Bond wouldn't crack; neither will I.* He was now in his third year of profit conventioning, having relinquished a nowhere used book and comic shop—along with a wife and two squalling kids—in Detroit, in favor of wrapping his avaricious digits around the ready cash that science fiction and fantasy fans were willing to pony up for the privilege of shouting at TV actors, mobbing writers, and getting flimflammed by hit-and-run artists like the ugly gaggle that awaited him in the bowels of the Condor Hotel.

He wished he had been toting his hip flask. There was going to be one hell of a binge after BottleCon this year, he thought. *Like always.*

As Shacklee confronted the dealers in the catacombs, Martin Glass sat crosslegged, like a castaway on a raft, in the

middle of a kingsized bed in a fifth floor room. He was so intent on rifling through the confusion of notes, pages, and several leather-bound books that he did not hear Sandy use her key to enter. Her hair was windblown, but spilled expertly around her shoulders onto the leather coat, which was in better shape than the books.

"You should see the crowd downstairs. Rabid."

Marting grinned over his shoulder. "Yeah, my public."

"Finally working on that story?" She hovered closer, moving to an imitation Danish modern chair by the bed. She fired a cigarette and pulled a long drag, giving her report in jets of thin white smoke. "The coffee shop is positively grim; the bar not much better, but there's also a lounge. No stores within sane distance, but the night clerk deals in candy bars after ten o'clock." In a conspiratorial undertone she added, "They've got *Forever Yours* bars!"

Martin beamed back a look of approval. "I'm still on the research. This one's a bitch. I was working on something else awhile ago—the film piece."

"I should have noticed; the portable has cooled off." She craned into Martin's magic circle and picked up some stray sheets. "Drawing yin-yangs, now?"

"Those aren't yin-yangs, bubblehead, those are hex signs. Give 'em here." He was piling everything into a black briefcase.

Sandy yielded the sketches with mild surprise. "Not casting spells now, are we?" Martin transmitted his expression of butcher knives and cannibalism, as Sandy rolled on with a bemused smile. "No, from you glassy glare I perceive we are not. Raising the dead? Astrology? Tarot? Anything else you commonly classify as 'bullshit'?"

"We are not writing. We are driving. To a place called Bookperium, where we shall humbly request an audience with a gentleman named Trevor B. Lewistone."

"Why, pray tell?" Sandy asked, even though she felt it coming.

"He ostensibly has a book. Recommended by the fellow in Arkham, remember?"

"That *armpit!* That subdivision for rats you dragged me 200 miles out of our way to, in the sleet, just on a side trip? Oh Jesus, Martin, if this is going to be anything like *that* you can leave me behind to rap with the candy pusher downstairs because I desire no more close personal contact with spiderwebs, or mud puddles, or leering old men, to say nothing of dusty books, musty books, or moldy books, no matter how intriguing. Here, take the keys to the rental." She had rehearsed it well, and it poured out smoothly.

Martin slipped on his Levi jacket. "Partypoop. I thought you had more investigative *chutzpah*. Humph."

"Yes, I do—I'm a prizewinner too, dum-dum, remember my Tutankhamen piece for *Squire*?—and no, I ain't. Going."

"We might summon up Shuggoth to bite someone's ass. What am I supposed to do today, by the way?"

Sandy consulted a fingerprinty, hastily xeroxed itinerary.

"Nada. You've got a 'Writing Science Fiction' panel tomorrow morning at ten. And around midnight tonight is *Young Goodman Brown* and those Fritz Lang oldies you wanted to see, *Siegfried and Krumpholtz*."

"*Kriemhilde's Revenge*?" he said after she had fizzled out, frustrated.

"Right. By the way, the cafe has a patio, and the patio has a door, in case you'd like to avoid the Munchkin Masses waiting without."

Martin frowned. "You're really not going?"

"No way, sugarbuns, I'm headed for the showers." She unwound a filmy scarf from her neck and draped it on the chairback, then pointed at the briefcase that was now tucked under Martin's arm. "Do you have to keep that thing with you constantly?"

"I'm gonna need it if Trevor Lewistone has the stuff I'm looking for. Don't put anything on my account, Mrs. Peel...."

"Go!" Martin went.

He hit the patio about the same time the floodgates burst in the Pinnacle Lobby and the frantic BottleConners swarmed into the hotel. Concurrently, Norm Shacklee was leading the seething and griping memorabilia dealers *en masse* up the narrow security stairway, parcels and all, like Visigoths storming a castle keep. Norman liked to be in charge of things. The Condor, on the other hand, had no idea that the events of the day were just a taste of the horrors to follow, nor were they aware that never in the history of BottleCon had the convention returned twice to the same hotel. Shacklee knew. And he prayed that the Condor didn't find out until much later.

DESPITE A HUGO, A NEBULA, and a twenty-two year span behind his typewriter, Martin Galiss culminated—by the unspeakable standards of fanfannish cultism—an insolent trespasser, an interloping greenhorn supping on the sacred calf of "sf." He abhorred the "young" and "New Wave" labels since he had started out clearly within the field, submitting story-ideas that appeared deceptively workable when catalogued "pure fantasy." After a year of starvation he shifted his aim to major and middling men's slicks, amassing a formidable portfolio—but often his rent was paid by pseudonymous pornography.

Runner's Gimmick, his first novel, mated a telepathic protagonist with a spy adventure context and garnered notices ranging from condescending to tolerant. The *New York Times Review of Books* made the mistake of dismissing his second mainstream work simply as a "ripoff potboiler."

Shakedown—an agonizingly detailed chronicle of the heist of a benefit rock concert's receipts—strafed the bestseller lists, boomed in paperback, and put Warners and Fox at each other's throats for the film rights. Martin's ego and checking accounts were finally sufficiently bolstered.

He took the short fiction route back to fantasy, mercilessly polishing old file ideas and soon becoming a digest regular. Within fourteen months he had achieved both a Hugo for a short titled "The Couriers" and his "young, New Wave punk" notoriety. Winning a Nebula virtually on the rebound (for "Onyx, Dreamglass and Mr. Andersen") dumped fuel on the sparks of his colorful persona.

Scalding missives were swapped in letter-columns. The myth battered. Martin's personal-appearance reputation was birthed with the lob of an ill-aimed Washington Delicious

(Con security tackled the thrower near an exit, but Martin was already halfway up the aisle, the mike still clenched in his fist, trailing broken cable).

The convention invites flooded in, the grapevines slithered up Martin's legs, and the myth bloated: *Say did you hear what Glass did at the Utah con showed a pool-cue down a fan's throat and out his ass but the head off a chicken kicked a paraplegic into a swimmingpool you know his story about the chainsaw freako he really did some of that stuff kicked the editor of Starburst in the larynx and strolls hotel lobbies in the nude howling at the moon.*

But the travel was enjoyable, the tabs tempting, and a dozen projects could be overlorded from a portable typer and a phone.

"So why exactly, with wondrous places like New York and Miami dangled before you—nay, *pushed*—did you decide to hit all of these East Coast cons at the height of the monsoons?"

It was exactly one day and one shower later, and Sandy was fetchingly attired in a pair of large white towels, which were surprisingly lush, taking into account the general opulence of the Condor. She grimaced into the vanity mirror while Martin, on the obverse side of the divider, strove to ignore her attempts at sparking conversation. At the moment, Sandy's towels and their distracting contents were competing for Martin's attention with the new material he had culled from Trevor B. Lewistone's orange-crane interpretation of the Dewey Decimal System the previous day.

"With it raining like hell outside, why do you devote all your time to getting wet?" Martin yelled over the whir of her dryer.

The spawn of the black briefcase had now extended to cover the low table near the window, as well as most of the bed and strategic sections of the floor. The cold and faintly offensive odor of fresh Xerox copies clung to the atmosphere surrounding Martin's work-area. Several of the imposing volumes teetering on the chair-arm looked like Gothic monster movie refugees, and as Martin poured over the incunabula he seemed to mimic perfectly the manner of a quest-hardened alchemist with a sizzling lead on the philosopher's stone. Soon Sandy was again floating insistently at the perimeter of the pool of documents.

Martin desperately hoped he sounded plausible. "It's all in the nature of research, pure and kosher," he said from over a page strewn with spastic, illegible script. Once black, the ink had long faded to mauve and was nearly invisible against the mildeyed page.

He reached out to one of the larger, more crumbling editions, and slammed it shut with futile finality. "This damn stuff is no good. It's all in ancient Arabic." He reclined back and glared at the book.

"Perhaps an Arab—" began Sandy.

"Ah, knock it off. He'd have to be an absolute *truckload* of centuries old to understand this stuff."

"Maybe you could run it past the gal I know in the Classics Department at Southern Cal—she came up with some pretty unusual connections on King Tut when the tour came through LA, you know."

"Yeah, maybe. Different language, different people."

Martin leaned heavily on his crooked arm. His speech was getting bleary.

"What I mean is she can probably refer you to somebody more knowledgeable—hey, you're lookin' pretty spaced."

His eyes were already closed. "Mmm, yeah. *Kriemhilde's*

He was a bloody slot machine, a fighter who knew the advantage lay in moving so swiftly that the perpetually rotating feelings could never be arrested or attacked.

Revenge didn't come on till four-thirty...a.m. The schedule's all screwed up...

"I was there with you, remember?"

"Oh, so it was you that was snoring."

"I wasn't snoring. I don't snore. I crap out, but quietly. You'd better crash yourself, if you want to be in any shape to read stories and do twenty questions with your public at eight o'clock."

"Oh my god..." A stiff yawn prized his jaws apart, "...time is it?"

"Quarter to five now. Go to sleep, I'll have them send up coffee later."

"You're nice," he said, racking and dropping a bunch of pages to the floor so the bed was unobstructed. In a few seconds he drifted away, sleeping on his stomach with his hands bunched beneath his chest—a position Sandy had theorized had something to do with insecurity or fetal-posture psychology. She watched him pensively as he drowsed.

Once she was satisfied that Martin was well into unconsciousness, Sandy decided to sate her curiosity about the briefcase and its irregular contents. It had long been clear that Martin would continue his passive refusal to discuss the research in any degree approaching relevant detail, but it seemed to Sandy that *this* time he was purposefully titillating her with throwaway hints and vagrant nubbins of tantalizing information. Just as purposefully, she had quashed her journalistic zeal in favor of keeping Martin on the up and up in the weeks of convention-hopping that followed Sergei Cardwell's death—that was what had kept her from testing the case's mickeymouse lock with a fingernail file on a hundred nagging opportunities.

But now the goods were spread out like a picnic repast, instead of being hurriedly shunted back into the case, and were therefore okay to peruse at leisure for the first time—at least, until Martin woke up. Yeah, it's okay.

Sandy leafed through the brittle and waferous diablerie and studied the notes in Martin's frenetic, EKG-style handwriting. The handful of photos and drawings were more interesting than the books, most of which were in foreign tongues—along with several cassettes. Her first impression was a Christmas-morning brand of frustration that looking had done no good after all.

Martin had always been reticent on stories-in-progress, until each reached the in-print or "sold" stage. It was a superstition/insecurity mechanism he had developed early in his career to cushion him against rejections: It placed the blame for a story's failure not on the true quality of the piece, but on whether he ruminated too much about it before it actually sold. Masochistic, yes; unrealistic, yes; but it was a system so entrenched by negative reinforcement through the years that it had become automatic.

She began to recognize certain peculiar words through repetition in the notes, and on impulse got her pad and copied down a more or less complete list.

David J. Schow

Selloth. N'hai Ngaroiouthe. Thaghuraaitiothe. M'nai-Lupghth. Dietrachboelet. Sihg-Kriegknoptheclaira. Nom-Rilakhtep. Most-Poget. Jesus God!

She knew it would be useless to check a dictionary. She theorized that she would have to depend on Martin's erratic personality to produce an acceptable answer to the puzzle—and she usually counted on her theories.

Her guess that Martin was ripe to begin production fructified at approximately 7:12 a.m. the following morning.

Bare-assed except for the bedspread, which he swathed around his shoulders like a Dracula cloak with white dingleballs, Martin suddenly lept from the bed without even the courtesy of a yawn and blitzed the typewriter, squatting toadlike in the chair rather than sitting. The commotion on the mattress caused Sandy to half-rise. She fingered a nugget of crust from one eye, focused once on the madly typing Frog Prince, groaned, and re-buried herself under the dishevelled mound of blankets, sheets, and a double layer of pillows to mute the noise.

The pillows were rudely torn away, and the frog Prince said, "You wanna come watch *I Walked With A Zombie*? It starts in half an—" Nil response. Sandy was a corpse, in-state. "Er...how about breakfast, after it's over?" Nothing. "How about twitching, just once, sometime this week?"

She mumbled, the apparition vanished and the pillows were humanely replaced.

The room was empty when she mustered enough drive to shuffle to the bathroom. With freshly unracked clothing hanging on her arm, she paused to glance at the portable, which bore a single sheet and disappointingly few words: only two lines.

Hurricane Forest.

An homage to S. Rudolf Cardwell

The sound strategy appeared to be dropping the title into the breakfast chatter. This day marked the death rattle of BottleCon, and the rain outside sheeted down white and unfriendly.

"Hurricane Forrest!"—Sandy was almost ready to concede that the aura of mystery she had concocted around Martin's recent studies had been a total false start, and that its eccentricities had been for a disappointingly normal purpose: the careful sculpting of a realistic and authentic fictional milieu. It had to be credible, for the purists. Martin had once been warned that *Shakedown* could easily become a template for an actual crime. It all dovetailed neatly together for Sandy except for the prodding conundrum of the queer shopping list copied on her notepad, an irksome MacGuffin.

She granted her trusted spot theories partial credit for her budding success in magazine feature-writing. An outlandish hunch had turned up Victoria Lyle-Smythe at Southern Cal, after all. And the riddle of the list seemed negligible in light of the opportunity to parlay the mania of nine conventions in a row—all similar to the nightmare of BottleCon—into rewards

via assorted slants: the profiteering aspects...culture phenomena...fistfuls of non-taxable bucks swapping hands...wild parties"...more probably a series of articles.

The deflation of her prognosis for Martin's black briefcase spookiness would be a blow if it proved true. But she refused to dismiss the enigma altogether and laid it away in the back of her brain in favor of stoking up with self-satisfaction at the prospect of a slew of convention articles.

Thuguratiathe, my ass, he's indoor-gaming again.

The mirror's verdict was that she looked robust enough to try for breakfast.

She would have gone down the elevator fuming if she had realized that she had been veered from the truth a second time, and that her own trusted logic was at fault.

"Complex? Hell, love, my final draft of this thing is Hugo material for sure." Martin took a long, rich swallow of his coffee.

"Knowing nothing about Sergei, I assume all manner of joy inherent in this for Cardwell fans, right?"

"Not exactly—I wouldn't try to ape his style, if that's what you mean. More a tribute."

"Ah." Ask him about the list, dummy! "Hugo? And you're the one who spurns awards?"

"Irrelevant. This will be Hugo material whether I want it to be or not—mark me, Lady Macbeth!"

"Aha." Forget it and finish your coffee.

EMBRYOGENETICALLY, A HUGO is a foot-long cast metal rocketship, the bullet-shaped darling of countless Jurassic Age science-fiction magazines, the '30s ideal of interstellar flight, quadruple-finned with no real function to justify its tatty form. When screwed into a custom-designed base, bevelled, buffed and chromed, the result is a Hugo Award.

The long-standing lust of World Science Fiction Conventions to honor their beloved by totem was first assuaged in 1953. Rockets were meticulously machined to a design lifted from a Pontiac hood ornament and unofficially named after Hugo Gernsback (later ratified). In '55 a modified, standardized design made mass-production of the statuette possible and the Hugo was made an annual event—in the same year the term "sci-fi" was coined.

Though "potholes" gave freshly-cast Hugos a high mortality rate, their shape endured while the bases changed from con to con. In 1967 an attempt was made to cast them in lacite—which disintegrated, Flash-Gordon style, when the plastic failed to bind properly. In 1973 they did not even make it to the WorldCon and naked bases were awarded. Despite such hardship, the prize proved hardy and became the icon of achievement in sf. Two Hugos in the possession of one writer was a "collection." A tableful, ranked before a podium in a gleaming silver line resembling a miniature ICBM base, was a "celebration."

Brad Spingle eyed the celebration of Hugos dourly. Mentally he lined them up in bowling-pin formation and wiped out the arrangement with a punchbowl-sized Braddock Place Hotel ashtray.

The previous evening his security men had hustled a trio of science-fiction fans off his roof, where they had been craning over the sheer edge checking out the cartops eighteen floors below. Another gang had been nabbed beaming parked Cadillacs with full beer cans from a seventh-floor terrace after lampblacking "TANSTAAFL" into the hotel's Tuff-Kote with their flash lighters. The stroke of midnight signalled the start of

hourly rousting sessions, during which the sleepers slumped in Braddock Place's lobby and throughout the hallways were goaded into moving.

The avalanche of con-goers into his hotel frightened and angered Spingle—they weren't conventioners, for christ-sakes! The spectacle was wholly beyond his ken: Longhairs mingled with Army types (neither a propos of Braddock's ad image), untethered brats, acne-studded hyperthyroid cases, axe-waving medieval whackers, and a boggling ratio of plump, ugly women. The geeks in the leisure suits, swilling from plastic liquor cups, weren't too outputting until they started shouting. Other sub-phyla had not yet transgressed, but Spingle was dead-sure that fresh jolts were in store, especially from the holdouts that had yet to detonate. They were the ones sardine-canning sixty people into a single suite and singing until 5 a.m. Damn nuts.

Perhaps because the WorldCon was at last nearing its end, Spingle divined a crackling sharpness in the very air—it put his teeth on edge, like soured electricity. They had massed, like lemmings, in his largest meeting room for an awards ceremony, and he was discreetly overseeing, standing near the lip of the stage/platform, his back to a divider curtain, arms folded, lower lip protruding, eyes screwed into a cold and protesting squint. They danced nervous time between the throng and the chuckling luminaries seated to the rear of the podium, which stood stately support behind the celebration of Hugos. The din was grating; the litter, everywhere. *Goddamn cleanup crews are gonna carp.*

His teeth began to throb from perpetual clenching as he weathered the long-winded (and pompous!) presentations. This, now, was more like normal conventioning: In the matter of award-doling, these offbeats were as tongue-tied as the ophthalmologists and hardware store barons that formed the standard convention staple of Braddock Place. It was stultifyingly dull, and therefore safe turf for Spingle, who allowed his bunched back muscles to unravel. The combined body heat of everyone inside the chamber was suffocating, and Spingle fought the urge to unknot his tie. *And weaken myself before the rabble.*

At least now there was a glimmer of light at the end of a long and hellish tunnel. Spingle had decided this approximately two minutes before Martin Glass was called up to receive his Hugo.

Through repeated conventions it had penetrated Sandy Patterson's notice that Martin was one person out of a conspicuously minute clique at whom audiences risked booing. The applause was always frosted with ominous fringe noises. *The price of fame, she thought, suppressing a hoot.*

In her admittedly biased opinion, most of this year's eligibles, save Martin's (there was a short story, "Powerlock," in addition to "Hurricane Forest"), were pedestrian and lackluster. "Hurricane Forest" had come up a winner.

He took the platform in one bound from the center aisle. Never one to sequester himself from an audience by hiding behind a podium, it was his unswervable habit to drift away from the shielding, naked to the mob. He always confronted them with smart-assed confidence, snapping and colling the mike cable behind him with his free hand as though it might provide defense in a pinch—the fans breaking and lunging for his Adam's apple, for example. It happened every time.

Trace Weinstein, a comrade of Martin's from leaner years mutually suffered, was the official Toastmaster, the soul who would distribute the bulk of the Hugos. Special prizes, such

One caught it inside an elevator between the fourth and fifth floors; another sprayed the lunch hour crowd as he doodled on a placemat in the coffee shop.

as the Gandalf award or the prestigious John W. Campbell, were hallowed exceptions, having their individual keepers.

Martin had presaged easily that the award was his this time and had honestly been itching for an audience ever since he and Sandy had debarked the jet. "Don't worry, don't worry, for god's sake," she had chided—because another fact she had logged in becoming a convention veteran was that the honchos usually invoked a spontaneous excuse to suck Martin out of the ocean of folding chairs and into the snipersights of his "people," valid reason or not.

Note for convention articles: Traditionalists might enjoy wallows in conventional convention, but they sure as hell knew that good showbiz was potent PR. Martin and his followers always reciprocated handsomely.

The total noise factor in the arena caused Sandy to miss his first few lines. She did catch "... makes it obvious that Swope's taking away—no, stealing the Hugo must have been some kind of ballooning error... I've just gotta say that it..." before the rest was drowned.

A swelling sound grumbled throatily up from the rear of the auditorium and collided with the stage like a breaker on a beach or static turbulence magnified a thousandfold—but Martin had the amps behind him and dimpled, following through: "Aw, come onnnnn! Look, he didn't even show up to accept!" A knot of dissenters midway back were on their chairs and shouting, chief among them the man who had scooped up Swope's Hugo *in absentia*. Others still thought it was some kind of joke, and some barked their approval anyway. Trace beclined for Martin, who smiled, knowing that *he had won* and that the audience as a result would put up with quite a lot. He scanned the rows.

Peach pullover in the third row: hi, there. Watch what I do with them next! They never changed.

When spotted, Sandy partially covered her smile with an upraised corner of her program booklet. The volleys dissipated as Martin palmed the mike, shooing Trace away with a reassuring lie or two.

"I have been... chastized," he husked, *sotto voce*, and most of the crowd cracked up in relief. *Never apologize, just shift gears fast enough and they'll never...* "Now, you are all no doubt aware that Sergei Cardwell died earlier this year." The sudden heave of self-consciousness from the multitude was like a heat blast.

"I don't know how it grabbed you on a personal level, but Sergei was my friend—probably better than most of us—and I'm pissed off that there isn't even a mention of him anywhere in the convention literature this year..." He lagged, and the expected sprinklings of applause came. "I mention this not to wring a heavy-duty guilt trip out of any of you—God knows you've all got enough problems already—but when they first printed the story that's responsible for me being up here right now,"—he indicated the Hugo on the podium—"I had included a line that read 'an homage to S. Rudolf Cardwell' that got deleted by the editors." Rumbblings, from the throng.

David J. Schow

"Ah, how many people here have read anything written by Cardwell?" Moot question; they'd all clap. "Precious few, I see." Laughter—good pressure valve. "Okay kids, has anybody here ever heard of Edgar Allan Poe?"

Sandy perceived a disarming oddness to Martin's wicked grin—something was going on of which she was not aware, and she rapidly ran a mental playback to discover what she'd missed.

As Martin recapped his relationship with Cardwell, Sandy reconsidered the recent series of conventions and her past apprehension with Martin's antics as involved "Hurricane Forest," and the only bonafide loose end that surfaced was *surprise, surprise*, the totally meaningless list of words still in her bag, tucked behind her California driver's license in the glassine pocket. None of the words were in the story. The only place she'd ever seen them at all was the flip side of a napkin stained with tomato sauce.

He's playing them out, like a fisherman.

"... does warm my heart to know the dedication will be reinstated in the Hugo anthology—hey, just a bit more background on this and you can go to sleep, okay? Now, Poe fans—hah, thought it was a throwaway, didn't you?—how many of you are familiar with a poem Poe did titled 'A Valentine'?"

IF ANYONE MIRRORED THE VIBES of contempt held for the audience by Brad Spingle, it was Brian Clintus Glass. As an example of a Martin Glass fan, his name to the contrary, Brian Glass was at best stotypical and at worst a certified fannish *non sequitur*. Nineteen, prematurely balding, with thick glasses obscuring red-rimmed and liquid eyes, Brian was the essence of alienation. His clothes, ill-fitting, mismatched, and outmoded by at least a decade, made him a nonentity among the anachronistic dress that always abounds throughout sizable fan gatherings. He looked like the most glibbie mark ever apt to stumble into the embrace of an oily-tongued master of flummoxery: A purchaser of Klingon Unix Warning Whistles and plug-in potato peelers; a subscriber to *Lug Nur Quarterly* and *Contemporary Inventions*; avid disciple of *The Beverly Hillsbillies* reruns and fervent miser of string—the complex nurd. Brian Clintus Glass had all the lesser being bamboozled.

Behind the secret identity, Brian Glass was in fact a third-year UCLA computer-programming student, and a *cum laude* graduate of the Evelyn Wood school of Instant Book Digestion. He possessed a 98% eidetic photographic memory, instantaneous recall, and had not seen a grade lower than an A-minus since his second quarter in first grade. A restless collator of facts, the virtual library of offbeat data he had mentally amassed and cross-referenced made him a consistent trivia bowl champion at affairs like science fiction conventions. He made every referent and in-joke his business, if for no other reason than to be the first to laugh at

veiled dialogue in dark theatres.

He had begun collecting Martin Glass books primarily because he liked a shelf of works featuring his own last name, but later used the excuses of "first editions" and "cover art" to justify the set until he got around to actually reading them. He wiped out *Shakedown* in sixteen minutes with admirable recall, and the rest of Martin's entire body of literature fell during the commercial breaks of Brian's favorite TV shows.

Brian listened intently to Martin's speech, hoping to snatch tasty trivia on "Hurricane Forest" that would allow him to continue his traditional and impudent one-upsmanship. He knew Poe well.

"...poem Poe did titled 'A Valentine'? It was written for a woman Poe was chasing named Francis Sargent..."

Osgood. F.S. Osgood. Whom Poe begged to elope with him following the death of his wife Virginia, during a period that was the height of his literary proficiency and the utter depth of his personal despair. Brian's notebook was out and he scratched notes with a Pilot Razor Point pen: "A Valentine..."

"...was that Poe told her that her own name was concealed somewhere within the poem itself..."

Naturally she eviscerated the work, and found the interpersonal puzzle impossible to resolve. The type of thing that could become maddening if a hint was not tossed—the type that after awhile ceases to be lighthearted.

"Now—no, no—I don't go in for wordgames, I mean, but...as some of you might have guessed, Sergei's death really put me away—I'm okay now—but I thought I'd clue you that the story itself is a puzzle, by way of honoring Sergei's memory, so if you've read it, reread it and think of him, and if you haven't—ingrates—rush out now and buy the issue of *Forbde's* it's in, and when the book comes out buy that too, because it means a lot more bread for me!"

The audience was laughing politely, but Brian Glass was not listening. *The gimmick of 'A Valentine' was...* It plunked into place like an IBM card into a bin—that Mrs. Osgood's name was woven into the poem a letter at a time, the first letter of the first line, the second of the second, in a twenty-line poem for a twenty-letter name: Francis Sargent Osgood. Brian tore the thumb-dulled copy of *Forbde's* from his inside coat pocket, and it fell open naturally to the splash page of "Hurricane Forest," another Bruno Dunhill painting.

Swinging the mike to Trace, Martin voiced a final thankyou and relinquished the show. The reaction was healthy and warm as he returned to his seat.

"Don't you ever get tired of this," Sandy joked, and as Martin plunked down she twined her arms around his neck and planted an Oscar-winner of a buss smack centerwise on the wisecrack mouth. "Congratulations."

Martin smacked his lips loudly and said, "Do I have to win another prize to get more?" Sandy stuck out her tongue, evilly and said, "There's not enough room in the aisle..."

"Where there's a will—"

"Quiet, fool."

"Got to ya, did it?" They were both breaking up and collecting stares of annoyance, which caused them to collapse even more. *It doesn't matter if the jest makes sense—mirth bottled is mirth tripled!*

"What in bloody hell is going on back there?!"

Like the adrenaline rush a thief gets when he believes himself caught redhanded, a chunk of ice leaped between Martin's ribs—but quickly he realized that Trace's exclamation was not directed at him or Sandy. His gaze was

plastered to the rear of the hall, and by degrees everyone was standing and turning to trace it.

Brian Clintus Glass was rising upward, unbalanced, as if being gradually hoisted by a faulty angel-wire in a highschool Christmas pageant. He hung humilifyingly suspended above the tables, chairs, and gawking people in the rear of the chamber, kicking and yelling. A few kids leaped and tried to touch him as he drifted up, but they came short. His voice jumped two octaves and his shouts began to rasp over the borderline into terrified panic. He began to windmill his arms and his resemblance to an in-place runner was ridiculous. As he wailed, the crowd, diverted from the stage and the steady hum into which the ceremonies had eased, laughed uproariously at the knuckleheaded stunt.

But Brian was not laughing. Neither was Brad Spingle.

"How the devil can he do that??"

"Oh Jesus, just what we need, a fuckin' nut!"

Spingle had his own epithets. The goddamn morons had rigged his most expensively decorated meeting room for asinine highwire tricks. He aimed himself, like a howitzer shell, at Trace Weinstein as he stormed the stage. Trace saw the angry three-piece suit coming, but did nothing save to display an exaggerated "don't ask me" shrug.

"Get that pisshead off my roof!"

"Help!" Brian screamed, trying to grab a nearby girder. His copy of *Forbde's* was already lost, and now his notebook fluttered to the floor, like a clipped butterfly. It was fielded by a young con-goer in a "Let Wookies Win" T-shirt. In the fracas, Brian's right coatleeve had shredded completely off somehow, and wisped down like a dead autumn leaf, in plaid. His left oxford followed, and then his glasses detached themselves from his face and hit the rug with a crystal bounce. Someone stepped sidewise to catch them, miscalculated, and there was a snap of fractured glass. Brian did not hear it.

"Get me downwwwwnn!"

Spingle was spearheading his way brutally through the maze of attendees toward the cluster beneath Brian, bellowing all the way: "You're gonna be charged for this, you dumb sonofabitch, you raked up my ceiling and you're gonna pay through the ass, through the ass, I'll see to it! Do you..."

Brian did not hear Brad Spingle, either.

Teeth gnashing, Spingle cast around and grabbed a fistful of shirt. "Get him down!", he snarled. "Get him down now!" He had not really expected to get his wish.

As they all looked back up, Brian Glass exploded. He pulled in a lungful of air for a shriek, and his body suddenly disassembled in a thousand directions, like a hailstorm of flesh, with a meaty pop. Spingle and the crowd were rained in blackish blood and needle-like chips of bone.

There was a microsecond of total silence—the first for the entire day in Braddock Place—and then came the first new scream.

BY MORNING there had been thirteen more. Before the dumfounded eyes of roommates, in the safety of friends, absolutely without warning, they were hacked into hamburger. One caught it inside an elevator between the fourth and fifth floors; another sprayed the lunch hour crowd as he doodled on a placemat in the coffee shop. Another was expedited in a corridor, causing an elderly guest to have a heart attack. Rumors of a "conventioner's disease" were the only things that reached

the papers—at least, the early editions.

"What are you doing?"

"I'm packing. I'm freaking. We're leaving!" Martin was recklessly dumping clothing into suitcases. He looked up only once, shook his head, and yanked more hangers free. "You hear me?"

Sandy was suspiciously composed; Martin furtive.

"Yep," she replied as she walked to the bed, slammed the suitcase lid over the disarrayed shirts and pants, and sat atop it. "You," she intoned with poisonous sobriety, "are going to explain just what the bloody hell these words mean, and what you have to do with what is going on."

She held up Brian Glass's notebook, coffee-colored spatters on it where his blood had dried. Martin's eyes froze on it as his heart attempted a straight-out getaway through the front of his chest. He spluttered.

"These words are identical with the first five words on your list," she continued, wagging the pad like a movie shamus. "These I copied from your notes months ago, and *this* I got from the little kid who grabbed it yesterday—exclusive. Why do I feel in no danger having these, despite the craziness presently taking place here, Martin?"

"Goddammit, I should've known you'd—" Martin muttered. Sandy said nothing, but sat with graveyard earnest and a betrayed expression as Martin let the clothes drop to the floor.

"I could tell you that they're common fan-terms culled from some of the more popular stories—cultish bywords, like *slan* or *spu-fon*. Or acronyms, like FIAWOL. Uh, extremely long acronyms...but I have a crawling indication that you wouldn't buy it."

Not even a nod.

"Okay, it's all yours. What they are—the complete list, by the way—are the names of gods."

"Gods...?" *Gods? You mean these tongue-twisters are gods, gods as in thunderbolts-from-Mount-Olympus-for-godsake GODS?*

"Er, eldritch gods. Members of the Old Gods, the Hallowed Gods."

"What!" *It couldn't be that easy.*

Martin launched into the admission. "They're other-dimensional gods. They have the power of 'collapsed evil' at their disposal. They are vain and entirely mad. And there is one so insane that he has decreed instant, violent death to any human who should dare to speak his name aloud." He said it as though reciting a recipe for hamhocks.

Sandy cocked her head, as though she did not quite receive what was sent. After a moment: "Gods? You mean that if I speak these...names aloud," she ran her index finger down the crumpled list, "I'll get disemboweled, right here, right now by old Nigger-eye-outh himself?"

"No. Besides, it's Nig-ar-ay-outh-e."

"That's no explanation, kiddo."

"Remember many moons ago, I told you that Sergei Cardwell had been murdered by his readers—well, this is it. My revenge." Martin did not look sincere.

"You'd better keep going." Wary.

"Surely you see, Sandy? I do research! I dig up the names! I incorporate the names into 'Hurricane Forest,' throw out a chunk of bait—"

"Which is why you mentioned the Poe poem, I suppose."

"Yeah—same method. And the barracudas that analyzed Sergei to death will be the same ones who dig into this story."

"They'll find the names, and recite them, and die?"

"Er, well, it's not as—"

Sandy had been staring directly at Martin, but now she tilted her eyes to the page and began to read the names phonetically. "Sell-oth. Na-high Nigger... I mean, Nig-ar-ay-outh-e. Thog-ur-aye-a-ti-toff."

"Don't do that, Sandy, please, it's—" Martin moved forward, hand outstretched to snatch the slip of paper.

With quarterback expertise—she had planned in advance—Sandy slithered around Martin's grasp and in seconds was billeted in the bathroom behind a locked door, shouting the names.

The door slammed in Martin's face, jarring his jaw.

"My-my-lap-poo!"

"Omigod Sandy don't! Don't say it!!" He pummeled the door, trying to drown out the sound of her voice.

"Deek-tryek-e-bolet!! Martin!"

"No! Don't read! No, no, don't say it shut up PLEASE Sandy don't say it...!"

"Is this the biggie, Martin? The zinger? Seep-kreck-nopp-tie-larya!!!"

"No! No! No!"

"Howabout Nome-re-lie-thi-to...Martin! Oh my God Martin! Martin! OH NO, MARTIN!" There was a grisly thrashing noise, and Sandy's screams reverberated off the tiles.

"Oh Jesus!" Martin planted his heel just above the shiny brass knob, and the door splintered free of its thin frame.

"Sandy!"

Sandy sat on the john, arms folded, screaming and kicking the contents of her night-case around on the floor. Her eyes drilled twin soldering-iron beams through Martin's brain and into the wall behind him. Her shouts rang out with the echo of glass on metal and she said, "And dear old Mossed-Paget, Will do it every time. No more names. I'm still here, Martin. Martin?"

Sweatbeaded and panting, Martin was meeting her frosty stare but not seeing her. He was quivering as he wheeled slowly and plodded, zombie-like, to the bed, mumbling *oh god oh shit oh god*... Sandy came close and pulled a switch that threw him completely off by saying, "Come on, pack. Let's clear out of this nuthouse."

He stared at her, palpitating, like a fuzzhead coming off barbiturates. "That fabrication stinks, Martin, utterly." *Positive reinforcement.* She licked to know what in hell was really transpiring.

He stood and she held him, unaware that he was staring at his reflection in the mirror behind her. *Himself. Martin Glass. Railroad.* "What about the list?" he said tightly—watching himself.

She brightened. "Bullshit, love. I don't believe a word." What she would never admit was *Sorry for the scene, but I'm not suspicious anymore... or scared.*

"Belief is everything," he muttered, catching his own basilisk gaze. "Nice to know I'm loved," he added.

"Ah. Now the latter matters; the former does not." She kissed him. She was safe. "Let's go."

They escaped and hopped their flight back to LA, on time, while that year's WorldCon collapsed behind them in ruins and corpses. Sandy was unaware that the motley ranks of sf fandom were about to supply the late Sergei Rudolf Cardwell with a hell of a lot more company.

Joy Ride

Christopher E. Blum

THE SUN WAS COMING UP AGAIN, amongst the rumours, amongst the ruins. A feathery light melted the darkness across the river, and the stars disappeared one by one. Except for the last one. The last star lingered longer even than Venus. It glittered maliciously in the October chill until the sky was soft blue ice and glowing on its own. Then it too winked out. Or moved away.

There was a shuffling on the island rooftops. In the shadow of an elevator motor and massive pulleys, a man scrambled on hands and knees to the edge of a roof. He crouched in a battered lean-to of hip high sandbags and canvas.

Sunlight placed the city into perspective. The outlying suburbs, once the manicured refuge from the cities, were rubble. Condominiums huddled three walls to the wind and roofless, while pots, cans and bottles blinked like diamonds in the overgrown rubbish. Vinyl siding the color of Sahara sand was *personal in spite of the darkness*. In the distance a place of it caught the wind and buzzed asthmatically.

On top of the Agriculture and Commerce Building, sixteen floors over old Des Moines, Jackson Pierce surveyed the city with a pair of binoculars. He looked older than his forty-eight

Courtney Skinner



years. There was, in the middle space between his gold framed glasses and his squint, a great disappointment. A look of pain, and angry frustration, that seemed to hang about his shoulders like a weight. Wiry, watchful, and with too much grey in his beard, he was a survivor. He rubbed his hands together briskly for warmth, and then focused the field glasses hanging from a strap at his neck.

Automobiles stood peacefully in the streets and the highways, some half in driveways, some on top of each other. Cars apprehended in the act of moving, colliding, delivering, embarking or arriving. Now they sat on deflated rubber, silent and empty as locust shells. Electric cells were dead, windows splintered, and rust smeared the once sleek contours like paint.

The river was up. It was choked back and bulging on the new ice that floated down from the north. The metal warehouses in rows along the banks seemed to drum softly as the water swirled across empty loading docks and filled the dark interiors with floating debris. In the early hours, nothing moved except a baby raccoon that played with peices of glass in the window of an empty drug store.

At the roof edge, Jackson Pierce heard the noise below him. He roved the building fronts with a quick, professional scan of his field glasses. Random noise usually meant animal. Usually, he kept looking for the source and hoped that he wouldn't have to crawl to the other side of the roof. His knees were going bad.

He found the raccoon and let his breath out slowly with relief. He studied the bandit face through the glasses and smiled bitterly. It seemed to him that everything was out of phase. Even birth cycles. He watched the animal play among the rusted containers and sun-faded plastic bottles. Jackson Pierce had once bought shaving cream, flex-mask, and supplements from the pale girl who worked the counter at that drug store. But all that, too, was history.

Two rooftops away, on top of the old YWCA, Pierce saw a sentry scramble to a blind similar to his own. The person moved clumsily in his furs and kept very low. There were several people living in the YWCA. It was the only other colony in the city. Pierce waved briefly, foolishly. Whoever it was ignored him.

As he sat on the warming roof, there was nothing much for Pierce to do except be watchful, which he was. He looked to the west, out by the truckway. Once the giant tube trucks had whispered across it in an endless procession, following the power lines imbedded in the asphalt like migrating whales. The stop and go crush of commerce had been a symphony of sorts. Radio instructions had blared above the gummy slur of fat tires. And through it all was the shivering drone of the giant flywheel motors. Straining in magnetic field bearings, the sound had mingled on warm nights with the gentler sounds of crickets and softball games. But those were old times. Past times. The truckway was empty now, and a single wheel spread its parts to the elements. It lay scattered across five lanes like a mysterious educational display.

Jack leaned into the Gel-Pac swivel chair and poured himself a murky concoction of leaves and roots. They called it tea, and he had grown to like it. The sun stretched upward by degrees, and mist drained from the hollows and the building shells like brackish water. He relaxed. The thermos was from his own office. So was the chair. It was an over-stuffed, flesh-fulfilling, top of the line vibrator model which of course did nothing more now than squeak under his bony frame. He thought of it fondly as the caress of one fossil to another.

Midway through his watch, Jackson Pierce was startled to see the other watchman across the roofs wave a bright yellow flag at him. Pierce dropped his cup and grabbed the braided line at his feet. He pulled hard and felt, rather than heard, the clatter of alarms under him. On the floors below, human beings dropped to all fours or hid. Pierce saw a flash of light in the distance and he squatted behind the sandbags. The glasses brought a three-pronged delta shape into view. It floated along the river's edge deliberately, slowly, plowing through the mists like a fist. Then as mysteriously as it had appeared, it was gone. It was the first patrol in more than a week, an intruder on their spare existence that left him with the nervous shakes.

Pierce heard a low whistle from behind him and turned around. He saw Bill Robbins peeking through the access door to the roof. Bill was the leader of the group. His broad face gleamed like a pie tin in the shadows and his dark eyes were concerned.

"We're O.K.," Jack called softly over his shoulder.

"How close was it?" Bill asked. He didn't stick his head out.

"Half mile or so, but I didn't see where it went," Jack answered. "No tool packs, so I think it was just a standard survey model. Hunting. Everything all right below?"

Bill nodded and shut the roof door quietly. Jack could hear him whisper to someone in the stairwell.

Pierce turned his attention once again to watching. As the morning progressed, he saw a large dark bird beating its way toward the west in the chill air. It moved slowly, like a swimmer. Later, something loud splashed in the river and the sound of it left Pierce strangely sad. He couldn't ignore the vision of the robot flyer. He spent the next hours dipping the glasses across silent streets, probing the tumbled dimness of alleys for alien machines, and spinning a complex web of his own sorrow. His thoughts turned to his wife, his daughter in Colorado, and even to the tropical fish in his study. All were gone. In a way he envied them.

That afternoon Pierce worked in the gardens, glad that he didn't need to help with anything more strenuous. His least favorite duty was hauling water. Someone else was doing that now, he could hear the soft rumble of rope and buckets in the elevator shaft.

Jack adjusted the blackout drapes along the southern exposure of the garden room and the sun piled like warm sand into various boxes, drawers, and waste baskets that contained their small garden. He watered, pulled weeds, and searched for any kind of insect damage. And he thought.

To his left were tomatoes, dwarfish and slow to mature, squash and melons climbing inexorably across rotting box ends, and rows of red tinged lettuce. On his right were the flowers, the chives, and onion. Marijuana plants bent into the pale sun streaming in the windows, and in the dimmer corners, potted palms, ferns, and assorted bamboos rustled in the convection currents. Leftovers from a time when plants were the delight of an interior designer from Chicago and not to be eaten. He moved a box of struggling zinnias closer to the window. The seed packet, garishly orange, tilted over the shoots like a tropical bird.

There was a light touch at Jack's elbow and he turned. It was Alice. He hadn't heard her come in. With her rabbit moccasins she moved like a shadow across the frayed carpeting. Before the alien ships had landed, before his world had collapsed, Alice had been his secretary. And later in those first grim months of recovery, she had been much more.

Even though she now lived with Bill, her friendship with Jack had endured.

"You got any greens for the animals, Jack?" she asked him. He motioned to the weed box. There were a handful of leaves and an inchworm in it. "You seem sad today," she said as she stuffed the greens into a rare plastic bag.

Jack shrugged noncommittally. Sadness was only part of the desolation he felt. Alice walked over and stared out the windows with him at the hazy patchwork of frost-burned farmland in the distance. He reached out and bugged her.

"Do you know what makes me sad?" he asked abruptly. He pointed at the caved-in dome of the old capitol building. "That makes me sad. And that. And that." His finger jabbed in the direction of the broad truckway, and at the marquee of a theater sprawled brokenly in the street like a drunk. "It wasn't great. No. But it was all we had. I used to get angry because of the foul air and bad water. Now it makes me sad because it's gone. They've stolen our history, as well as our future, Alice."

Alice was silent, looking dutifully at the rubble. In the distance a broken grain silo caught the sun. It stood like a giant stump in a cluster of automatic harvesters.

"These patrols really get to you don't they Jack?" she asked finally.

"They told us to walk like beasts," Jack answered. He was almost whispering to himself. "And we do, Alice, we do. Look at your knees. Look at mine. Look at your face. Those lines didn't just appear. They worried themselves there. We live in these abandoned buildings like rats. Look at me for God's sake, sitting here at 48 years old, growing grey nostril hairs and picking aphids off sick tomato plants."

"Oh come off it now," Alice snapped. "We talked it out a long time ago. We do the best we can, and it isn't bad. You voted to stay Jack. And besides, there isn't anywhere else to go."

He sighed. "But why not Alice? This is our home, not theirs," he said.

"You're right," Alice answered in a gentler tone. "This is our place. Right here, now. At least we are still alive. Why not make the best of it, and forget about things you can't undo." She drew him to the carpeted floor. She leaned on his shoulder and they sat quietly for a time in the soft light of the sun.

"Today, when I saw that thing, I guess I was reminded..." Jack's voice trailed off. He had indeed talked himself out, a long time ago.

"It's O.K.," Alice said kindly. She patted his knee.

THE CLANKING OF ALARMS flashed through Jack like a short circuit. His thoughts were scattered by the clumsy bells strung through the corridors. Alice jumped up and ran to the sandbags and furs piled in the corner. She hissed at Jack to hurry and join her but he cut her short with a quick wave of his hand. Two alarms in the same day meant trouble and he was curious as to what kind. Jack crawled quietly to the windows and looked out. The ruined city was as still and as grim as a tomb. Nothing moved. He waited on his stomach for the all clear signs. It seemed a long time in coming, and Jack grew uneasy. He decided to join Alice in the corner. Just as he reached out to pull shut the drapes, he spotted a movement below. He froze. From where he was, the humans looked pitifully small.

They were refugees from somewhere, making a run on unwieldy knee pads and gloves. Jack counted six. They

seemed experienced. They scrambled around the corner of the store below quickly, with heads bowed, and all wore real furs which meant that they had spent a lot of time in the open. The leader had stag horns lashed to his head with a bright red cloth. As Jack watched, a gleaming robot killer banked around the corner and followed the group. It was graceful, deceptively toy-like. It was no larger than the humans it hunted, yet the shadow of it rippled noiselessly up the pavement and covered them all like a phantom shroud.

The machine quivered as the alien circuitry inside it decided whether the creatures below it were animal or men, and Jack held his breath. It made no sense to try to move outside. The robots appeared from nowhere, at any time, like a light. It was even stupid to sprint between the buildings because the machine watched the street with the tenacity of a panther, waiting to strike at the next slight movement in the rubble.

The humans herded together and moved in a shuffling game of follow the leader that led them to the base of the YWCA. The robots could be fooled. They killed only men, not animals. It was important to understand the simple rules of the game. The humans below were playing it well.

"They've made it as far as Sammy's," Jack whispered loudly. He hoped they made it.

"Please Jack, come over and hide. Get out of the way," Alice pleaded.

But he watched. He watched with the painful knowledge that the humans in the street might even be futilely barking or croaking in an effort to placate the sinister force poised above them.

One of Sammy's people appeared at the first floor of the old YWCA, lying flat in the shadows, and something in the angle of the robot's flight tipped Jack of the outcome of the charade below. Sammy's man must have shouted something; must have told them to move the hell away before they drew attention to the others inside. The leader of the humans stood up in a half crouch. Briefly, Jack saw antlers, dark hair in strings and an open mouth, black and twisted like a comma on the brown face as it looked up, startled at the hidden voice.

Then there was a flash and a spurt of steam. The others panicked. They ran like quail for the shelter of buildings. The machine hunted them down with unrelenting accuracy. One by one, before any could scramble more than a few yards, the law of the land was enforced. It was over in seconds, with nothing in the buckled street except smouldering hides. Jack looked away.

The machine dropped within inches of each steaming corpse, as if it were nothing more than a friendly doctor checking for pulses. After a while it drifted into an alley and doglegged through the empty streets with cool precision as it headed back toward the river.

Jack backed away from the windows, static electricity crackling from his fingertips as they brushed across the dirty carpet. The city would spend a tense night. The beleaguered remnants of old Des Moines would breathe the dark still air of the bunkers they called home, and they would be afraid. He tugged the drapes shut with an angry slash at the cord.

ALICE SAYS YOU'RE DEPRESSED again Jack," Bill said. He made himself comfortable on the bed opposite Jack.

Jackson Pierce sighed and put down his book. Bill meant well. "What's it to you Bill?" Jack asked. He received an instant grin in return.

"That flyer ruined the crawlway on the west side yesterday," Bill answered. "We're going to have to repair it and I need to know if you feel up to that."

"There were people out there," Jack said. He shook his head sadly and wrapped the book in a piece of yellowed plastic before putting it in a drawer.

"I know it Jack," Bill answered. "But what do you want to do about it?"

"I want to get out of here, Bill," Jack said to him. "I don't want to live like this any more." Jack waved his arm in a wild arc around the sandbagged enclosure that was his room. It had once been the branch office for some forgotten conglomerate. He had picked it originally because of the simulated wood, the thick carpet, and the sense of familiarity it afforded. Now the carpet was infested with fleas, the bottom sandbags leaked, and he felt like a ghost scuffling past the empty desks and terminal screens.

Jack listened to the two children at play in the vault nearby. Both were foundlings. They followed Bill everywhere. Two years ago Jack and Sammy had hauled Bill out of the street with his Army Com-Set melted to his chest. The kids had been with him then, and ever since. "This isn't natural," Jack said nodding to the young voices beyond. "There's no growth, no vitality, no future."

A shiny commemorative coin rolled across the floor and Jack grabbed it. Joint US/CCCP Mars expedition, it said. He held the silver disc to the light to see it clearly, and then tossed it back across the room to where the kids were playing. There were gleeful giggles.

"Look," Bill said firmly, "we have adequate space, food, and hot water. Sammy is trying to figure out the windmill stuff for lights. In just two years we've made a great start. An even more remarkable recovery. The patrols have dropped way off and—"

"Like yesterday?" Jack interrupted. "How long do you think we can hang on? How long do you think we should live in this mausoleum while these damn aliens pick us off one by one for target practice?" His voice was brittle.

"Just as long as we need to," Bill answered calmly. Despite the fact that they were virtual prisoners, Bill encouraged all to maintain a positive attitude. "We're doing O.K. here. Whether by luck or brains, I don't know. You're just getting wound up again."

Jack's face reddened. "It won't last," he said.

"What won't?"

"This set up, dummy," Jack growled. He wished that they could at least see and understand what was happening to them all. "They won't let you do it. Just like Pizarro and the Incas, Cortez with the Aztecs. Nobody understood how a great civilization could have been so totally obliterated, so broken in spirit."

"We've got plenty of spirit," Bill answered smugly.

"Sure," Jack said. "All eleven of us. I'll tell you one thing, as soon as the situation warrants it, you can kiss your solar heat, and your garden, and your dreams of peaceful co-existence goodbye."

"We'll have to deal with that later."

"Later?" Jack asked in amazement. "We are on our hands and knees now! Maybe they want to keep us as pets. In another few years we'll be ready. Probably willing. Maybe even asking them to take us for walks."

Bill sobered. Hatred for the alien reptiles was universal. "You've got a bad attitude Jack. You may be correct, but what can we do, except the best we can." Jack tumbled the

phrase in his mind. He was sick of it. "This isn't a time for cavalry charges and noble acts," Bill continued. His eyes flashed as he talked. "The experts tried all that, or don't you remember." Jack did remember. The summer heat, the flies, and the stench, still gave him nightmares. No human alive could forget. "Why don't you relax?" Bill asked. He took out his pipe and a small bag of home grown marijuana and offered it to Jack. "How about getting stoned and playing a little ping-pong with me and the boys over at Sammy's?"

Jack shook his head. "Maybe later," he replied tiredly. There was no point in trying to communicate the unease he felt. Or the anger. He was tired of the days slipping by unnoticed, tired of nagging fear, and mostly tired of being treated like a crank.

Bill wandered off with a shrug to play ping-pong. He whistled for the two boys and they ran to him like fat pups. Jack watched them go and wondered what Bill would do when he ran out of the bright, vacuum formed ping-pong balls. Technology had many faces, and most were already forgotten.

Several hours later, Jack was jolted out of a fitful sleep. Bill shook him violently and then lit the lamp on Jack's desk while Jack cleaned his glasses. Bill was huge in his furs, and impatient. Jack adjusted his kneepads and pulled on his beaded Indian "walking gloves" while Bill talked. There was a newcomer at Sammy's, a visitor that carried outside news. Bill's constant urging alarmed Jack. The trip from Sammy's over to Jack's place was rough now that the crawlway was damaged, but Bill had made it quickly. Jack wondered what rumor could be so important as to warrant a night crawl.

At Sammy's they were greeted by Sammy himself. He was a former swimming coach. Sharon was with him. She was a serious woman of about 55 who had been a teacher of mathematics at a Catholic television school for girls. Together they ran the small colony of six adults and three children that inhabited the red brick security of the old YWCA. Jack and Bill piled through the entry tunnel and then helped restack the sandbags. They followed Sharon's flickering candle past the mounds of rotten furniture and broken glass and then up the stairs to the big shower room on the third floor. The shower room was the best insulated against the robot flyers and was used for meetings and social get-togethers. Jack helped Sammy pull fat chairs into a circle. Smoky lamps splattered the corners with a foul mixture of animal grease and salvaged petroleum oils.

"Bill, would you go get our visitor please?" Sammy asked. He rubbed his bald spot nervously. "I think he's still down in the kitchen."

Bill was gone before Sammy had finished. Jack settled into one of the chairs and kicked his feet out in front of him. He felt no tension in the air, no hostility, just concern. "What's going on?" he asked. He stifled a yawn.

"A guy walked in here tonight Jack," Sammy said. His brow was lined, his shoulders hunched massively as he leaned forward. "I jumped him downstairs dragging stuff away from the main doors. He claimed that he didn't realize anybody was here, and I'm inclined to believe him." Sammy grinned widely. Camouflage was his main creative activity.

"More rumors of a food drop?" Jack asked.

"Not exactly," Sammy answered. "Could be nothing at all, but I thought you should hear him." He seemed distracted.

Bill entered the shower room with a tall, stringy-haired man still grimy from the road. There was nothing young about him except his quick movements, and it was this that Jack

noted. Traveling on hands and knees tended to ruin people. Especially older people. It robbed them of normal movement and made them creak and bleed in strange places. The new man seemed to be in reasonably good health except for a slight limp, and an empty look in his eyes. He dropped into a chair at once and bounced a little, like a dog trying to find the most comfortable position. Sharon poured tea and the man smiled appreciatively. There was an awkward lengthy silence punctuated by slurping. "Tell Bill and Jack what you told us Duane," Sharon prompted at last.

Jack studied the backs of his hands and wondered what would be missing when "Duane" left.

Duane stared into the steaming cup in his hands. "Well, I've been moving west for about a year now," he answered in a monotone. "I've had my share of scares. So have all of you I'm sure. But I've heard, and seen, some things. This is why I'm on the move." He held out his cup hesitantly to Sharon and she relieved it. "I'm... was... a graduate student in Survey History," Duane said. "I was in a tube station when the first ships landed. And then later we had a commune in the hills. For a while, I am what used to be called a reliable witness."

Jack revised his initial unfavorable impression. Something in Duane's voice promised, if not truth, earnestness. He listened carefully.

"Someplace near Dayton, I talked to an Air Force guy," Duane said. "The man told me that the robots are remote controlled, heat seeking devices. He showed me a lense as big as my face from the front of one. It was like a bug eye, faceted."

"You caught one?" Jack asked incredulously.

"No," Duane answered with a sigh. "But this Air Force guy and some of his friends did. They tried to paint a number on it, so they could keep track of where it went, and how many there were. But the paint wouldn't stick. He said it ran off like oil on water."

"Some kind of laminar force field," Jack muttered. Duane looked over at Jack blankly and stopped to gulp some more tea.

"So they tried to open it up, and it exploded," he continued. "I saw a piece of the inside. It didn't look like anything I could identify except crystalized seed pods maybe. It killed two of them. Then the tool packs, even though they weren't attached to anything, ripped through a regulation glassteel net, and they cut off this guy's hand half way to the elbow." Duane chopped dramatically at his arm with a calloused hand and Jack saw the whites of his eyes flash.

"Damn," Bill said. "We were going to—"

"Don't even try," Duane interrupted. "If you catch one, you're the one in trouble."

"Well, no news is good news," Jack said dryly. Nobody smiled.

"Tell them about Atlanta," Sharon asked Duane quietly. She seemed pale.

Duane continued. "Rumor has it that they've leveled Atlanta. I mean leveled." He paused, lost in thought. "Nothing but a glass plain," he said, "and they're building on top of it." Duane scratched under his fur tunic and watched the four faces in front of him.

"What!" demanded Jack.

"Let him finish," Sammy said and put his hand out to stop Jack.

"Yeah," Duane said, "and humans do the building. Like pack animals. And we can walk upright just as long as we do

as we're told. There are three of those mirror towers in Atlanta now, and lots of activity around them."

Jack glanced over at Bill, but Bill remained passive, as if he hadn't heard a word. "Probably cheaper labor than the robots," Jack said. "If it's true."

"Well," said Duane tiredly, "it's true. The Air Force guy I talked to was leaving for a safe area designated by the robots in his sector. And there seems to be more humans around. Traveling I mean."

"We've noticed it too," Sharon said quietly. Although they didn't speak of it, everyone knew that it had been Sharon in the window. Her warning about now weighed heavily on her.

There was another lengthy silence.

"Where are you going?" asked Jack finally.

"Anywhere but Atlanta," Duane answered coldly. "Maybe the mountains. There has to be a place to get lost up there."

Sammy stirred in his chair and cleared his throat. "You're welcome to stay here as long as you want," he said. The others nodded their agreement. New blood was always welcome.

Duane rubbed his eyes and threw his head back in a gaping yawn. "Thanks," he said, "but I'm beat. I lost the truckway and had to rough it through some switchbacks by the river with one of those things watching me. Is it agreeable if we talk tomorrow?"

Sammy nodded. With no further words he led Duane into the darkness and left the rest of them to their private thoughts.

The next day, Duane surprised Jack by shoving himself into the lean-to on the roof during the afternoon watch. "I've been looking around," Duane said. He seemed to be much more lively than the night before, almost cheerful. "You people have really got a great setup here."

"So they tell me," Jack answered from behind his field glasses.

"Seriously," Duane said, "I haven't felt hot water from a pipe in years it seems. You're doing better than most."

Jack put down the glasses and leaned back in his chair. Duane did indeed appear cleaner, and Jack noticed that sleep had erased the vagueness in Duane's eyes. "How are most of us doing, Duane?" Jack asked.

"Sad cases," Duane answered, "kind of shell shocked. I think all of them are waiting for an official amnesty." He was obviously disgusted with the idea.

Jack smiled. It was refreshing to talk to someone who wasn't trying to "make the best of it." He handed Duane the glasses and watched as the history student scanned the surroundings expertly. He shaded the lenses with his hands so that they wouldn't flash their position as he moved.

"Amnesty rumors again?" Jack asked.

"Not this time," Duane answered in dipped tones. "No choice. They are rounding up everyone who hasn't walked in already. Everyone that's left, that is. All very well organized."

"So it's finally come to that," Jack muttered. "Any resistance?"

"None that I can see," Duane answered. "Most people prefer life to death. The camps aren't grim. Plenty of food and clean, but I don't carry anybody's baggage but my own. I'll be moving on soon."

Jack retreated into a brooding silence. Duane watched several geese honk overhead. "I wonder how much time we've got here," Jack asked him.

Duane smiled privately, like a man remembering a punchline but no joke. "You'll get a robot with a voice tape

flying by," Duane said, "giving out the latest instructions when the gods decide it's time to leave."

"Gods?" Jack asked. The word stuck like dust in his throat.

"That's what we're supposed to call them now," Duane said. "Don't act surprised. Just standard colonial procedure. First you hit the natives on the head to get their attention. When they stand up, you impress them with a mirror and a wristwatch and tell them when the missionaries are due."

"Gods," Jack repeated stupidly.

"Ancient tradition involving spiritual advisors," Duane answered with a smirk.

"Since when do we need alien lizards to serve as spiritual advisors?" Jack demanded. "Or any other kind of advisor?"

"Since when?" Duane asked. "Since the time they decided to kill us for forgetting to bow. That's when." Duane handed back the glasses. He scooped a handful of pebbles from the cracked tar roof and began to flick them off the edge into the street below.

"So now we are on the receiving end," Jack said softly. He was suddenly afraid for the creature called man. "When cultures collide, one must be dominant."

"Unfortunately but true," Duane answered. He started to tell Jack about a forest tribe in the Brazilian Confederation that committed mass suicide rather than be assimilated. It turned out that the rise of the Brazilian Confederation was Duane's specialty. Jack asked him to be quiet. It was too depressing. The blue bowl of the sky clamped down tight on him.

Duane frowned thoughtfully. "Wife dead. Daughter missing in Colorado. And you're restless here. Especially since Alice and Bill decided to move in together. Why don't you leave?"

Jack bristled. "You seem to know an awful lot for someone who just happened by," he said.

Duane shrugged. "You get in the habit of watching people."

"I like it here," Jack said. He was defensive. "These are my friends."

Duane shifted so that his legs were stretched out in the warm sunlight. "You were in business, right?" Duane asked after a minute of silence.

"True," Jack said. He did not feel like talking. His mind was elsewhere.

"What kind?" Duane asked.

"Livestock air-conditioning units."

"You do the manufacturing?" Duane asked.

"I did some of the programming for the line robots," Jack answered impatiently. He wasn't interested in trivia. He just wanted to sit in the clear air and watch the clouds build on the horizon. "What's the point?" he asked Duane.

"A business problem," Duane said. "You have unlimited resources, but no mechanical labor force. No robots, no halves. You are in a race with time. You must bring a product to market before the competition does."

"What the hell are you talking about?" Jack asked.

"Civilization," Duane shot back. "Mammals. Art. Poetry. Crystal Cola and tooth decay." Duane waved his arms wildly in his fervor and Jack grimaced. "Vane-cruisers wandering through the constellations that we named a long time ago," Duane said. "My guess is that you folks still have a couple of years before the aliens get their mechanical Gestapo to level this place. This is a distant sector to them. Nothing here except breeding stock. Do you want to be here for the final

round up?"

"No."

"That's what I'm talking about," Duane said.

Jack was quietly thinking. "I wonder if this whole grim situation isn't just a first lesson in cosmic manners?" he asked.

"Could be, Jack," Duane replied shaking his head. "But unless a few humans can learn it fast, some precocious lizard child in the far future is going to pick your dentures out of a fossil bed, and ask his den mother why the whole human race suddenly went out like a flash bulb." His voice faded, and Duane seemed deflated. "I think we should organize," he added softly. Jack had the impression that the younger man had made the same speech many times before.

Jack grunted. He watched the avenues out by the wind-swept truckway. A bright flash drew his attention. He lost it. saw what appeared to be a dog scrambling in the rubble but nothing else. "Let's talk later, Duane," Jack said. "I'm on watch." The reality of death was always with them, sharp as a carbon blade.

Duane nodded silently and prepared to leave. He adjusted his pads and gloves and then shuffled across the roof muttering about his knees. Jack watched with sympathy. Then he reset the focus on the binoculars and re-examined the rubble by the truckway.



INTER ARRIVED with the first light snow. Suddenly it was white outside, the sunlight weak, and the windows frosted. The cluster of humanity in the buildings lived much like their distant ancestors of medieval Europe. Life centered around steaming kitchens and small fires. Duane stayed. Unless desperate, a human didn't try to travel in the winter.

But there were some desperate enough. In late November, two more people joined the community. They were on their way to the rumored free zone. Sammy used the extra hands to finally get wind generators set up on a nearby roof. There was a celebration as the fans creaked out the first dribbles of current for the lights in the garden, but Jack felt cautious about joining in with any great enthusiasm. It could only be a matter of time until the resources of the community were destroyed and the humans herded into the blossoming alien culture in the east. Fueled by the tales of the newcomers, there was even talk of a spring march to the safe areas. For the first time, Jack's thoughts turned to the real possibility of leaving the group. He discussed his fears with Duane in endless debates.

It was a cold, bitter night as the wind scoured the plains outside the city. Walls collapsed into the streets with the waterfall sound of shattered glass. The buildings creaked. Jack and Duane sat in the semi-warmth of Jack's cubicle, bundled in furs and talking.

"I can't believe that they use simple visual patterns," Jack said.

Duane leaned forward and banged his hand on the trunk that Jack used as a table. "Then why the lens?" he asked. "Obviously it 'sees' something. I think what we're dealing with is a simple man/not-man classification."

Jack frowned. He trusted facts, not theories. His own experience with one of the shining flyers was not one he could forget easily.

"Those flyers are machines, Jack," Duane said. "An expendable electric cop. These creatures take their portable strike force from world to world and then key the robots to the

sentient life form. Ours was easy. Four legs good, two legs bad." He grinned in spite of himself.

Jack stood up and grimaced as his left knee popped. He paced back and forth wrapped in a blanket. "All right," he said. "Let's follow that premise. If we want to leave here, and have any pretensions to organizing people, we must do more than crawl. But we can't stand up." The alien conquerors were brilliantly efficient. Without transport, even the privilege of walking from place to place, communication with other groups or individuals was virtually impossible. The population was isolated, docile, and kept subservient by airborne regional overlords that were invincible.

But they didn't control ideas, and Jack had been hatching one. He groped in the drawer of a water stained filing cabinet for his writing implements. He found the pad of yellowed paper and moved the light closer to the trunk. If their logic was correct, the solution was painfully simple. He drew an outline on a piece of paper and shoved it over to Duane.

Duane studied the sketch for a long time while the wind howled outside. "Sort of a Trojan horse then, Jack?" he asked at last. There was a truculent glint in his eye. "It might just work," Duane said eagerly. "If we keep it small, it might just work!" He grabbed Jack's pen and began figuring basic specifications in the margins.

The actual labor began in the basement of the YWCA. It was the only place with enough floor space, and it had an oddly placed loading ramp that gave access to the street above. After an initial burst of enthusiasm from the others, Jack and Duane found themselves alone in their enterprise except for Bill. Bill thought the whole thing was a waste of time, but seemed to gather some satisfaction from raiding his secret sources and dragging back material for them to use.

In the days that passed, Jack split saplings and soaked them in troughs until they could be bent easily. Duane talked Sammy out of a rusted lathe, and with Jack's help, hooked it to the stone from a potter's wheel abandoned in the basement. The work went more easily with such tools, and ideas hatched like eggs from the rustling mounds of shavings beneath the spinning stone.

Time slipped by unnoticed and Jack's initial creative burst gained substance. The project underwent a reverse decomposition process. At first it was a skeleton of birch and pine and wire. A yellow wood, hand lashed dome that shook to the touch and smelled of glue and sweat. Then it gained a body, piece by piece. Nearing completion, it acquired a sort of quivering, taut strength as a covering was drawn over it and the patchy furs tacked on, until it looked vaguely like a shaggy stone age tank squatting in the basement.

"It's not going to be big enough," Jack said one night after the communal meal. He and Duane were alone in the shop. The smell of wood was heavily overridden by the mildewed walls and a bucket of old paint Bill had left open by the workbench. "We can't get everyone inside this."

Duane halted his rhythmic sanding. He stared at Jack. The candle lamps pulsed with a greasy lemon light as the two men faced each other. "What do you mean 'everyone'?" he asked. His face glistened with sweat. "At most, this is for four people."

"But what about the kids?" Jack answered. "And Alice, Bill, and the rest of them up there? I guess I'm not sure which four." He walked over to the delicate framework and ran his hands across the struts. The thing was still ungainly, still caught in the final labor of birthing they had dreamed on paper weeks ago. The dark teardrop shape swept from blunt

to sharp in a cascade of synthetic fur pieces and incongruous bumps. There was a hole in the top where Duane was fitting a hatch.

"Jack," Duane said, "we may not even get four. Nobody up there even wants to leave this castle. This is just a game to them. Just another project to kill time between fly-overs. Like weaving, or raising chickens. Whoever wants to go with us, can. But don't count on being crushed by the volunteers."

Jack took off his glasses and wiped them on his shirt. "It's me I'm worried about," he said. "I don't know how I feel about this thing any more."

It was easy to plan and risk from the relative security of his desk, but he had difficulty with the image of himself actually abandoning the sheltered existence he now led and taking to the plains with a half-hatched plan for organizing resistance. The robots and their masters forgave nothing.

Duane spat into the sawdust at his feet. "That's the trouble with everyone now. They're gutless. What do you have to lose anyway? Maybe you're right Jack. You are too old, and too scared. You should just stay here with the rabbits, and the raids, nice and peaceful-like, until this whole situation just magically clears itself up and the aliens go home. Or until you get your free ticket to Atlanta." He turned away in disgust.

Jack was shocked. "I'm not saying that!" he said angrily. He grabbed Duane's shoulder and spun him around. He didn't know what else to say but he felt like putting a fist in Duane's face. After a moment of tense silence, Duane grinned easily and held out a sanding block.

"Nobody rides for free, Jack," he said. Jack took the block and went to work.

WE'VE BEEN WANTING TO SEE IT for a while," Alice said as she descended the steps. "Duane tacks up those help lists in our building all the time. Sewing, string saving, whitening. Now I'll get to see what for," she bubbled eagerly. Jack watched her face as he lit another of the candle lamps.

"Oh my!" Alice said. She walked over to the dark shadow and shook a wheel. "Where did you get these?" she asked.

"Pulled them off some of the slurry carts at the old charging station," Jack answered. "They're lighter than they look." He had painted them a dark flat brown to hide the bright yellow original color.

Her face was suddenly thoughtful. She seemed to disapprove. She walked around to the front of it. "It reminds me of a big bug," she said. "A beetle."

Jack watched her in silence. She circled the cart, touching wheels, poking gently at the skin, and sniffing like a cautious cat. There were slits around the outside, like shaded gunports and she peeked into the interior at the dull patina of polished wood and hand filed fittings. "They used to make airplanes like this," Jack told her, proud of his handiwork.

"Oh," she answered. Her tone was reserved. "Does it move by itself?"

"It can," Jack answered. "We push from inside, and look out through those slits." The craft was designed to be entered from underneath as if portaging a canoe. Jack bent down and threw aside the flap leading inside with an enthusiastic flourish. Alice was unmoved. He wanted her to get in and try it out but she refused firmly. Jack stood up with a familiar crack in his knee.

"We're fully equipped and loaded right now," he said, "and we don't have any trouble pushing it around the shop." He shoved it a little and there was a crunch of sand under the

wheels. "It even has a light inside. And those things are for the sails." He pointed to the flexible poles protruding like antennae from the bulbous front. "In case we can catch a wind. One of the reasons we designed it so wide," he added.

"So it won't tip," Alice said. "My father used to have an antique trimaran at the lake when I was a girl. Like this but not so ugly." He was surprised to hear her call it ugly. She examined the humped pseudo-creature in the dim light for a long time without any comment. Finally she walked over and sat down at the bottom of the steps. Jack started to put his arm around her but she pushed it away.

"This is very stupid," she said. Each syllable was harsh, distinct. "You might as well wear a radioactive badge that says 'target' on it." Her voice rose. "What makes you think that you can go ten feet in that thing? Jack, if there was any way to do it, I would have your head examined. Whose idea was this anyway," she asked, "Duane's?"

"Duane's and mine," Jack answered. He felt his pride slipping away.

She sniffed loudly. "I can't believe, after all this time, that you are this dumb," she said. The soft light framed her face prettily but the lines in it were stern. She stared at the vehicle in amazement and shuddered. "Jack," she said to him, "people die too quickly, too easily now. They don't need to dress up like a furry"—her hands were fists in her lap and she groped for words—"a furry cockroach just to get killed!"

"We won't die, Alice," Jack said evenly, "because we have it all figured out." He realized that sounded crazy. He tried to explain but she cut him off by leaving. She stomped up the steps and the sharp angle of her shoulders left no doubt in Jack's mind that she thought him a complete fool.

"You don't have anything figured out," she yelled angrily over the rail and slammed the door.

The candles flickered. He hadn't even had the chance to ask her if she and Bill wanted to go with him.

Jack contemplated the project, the tools, the bins of scrap, and the rolls of sketchy diagrams on the workbench. He felt the mildew descend around him like a cloak out of the dark corners. Duane came into the shop with a puzzled expression on his face and Jack guessed that he had passed Alice in the hallway.

"She didn't like it," Jack said.

"So I gather," Duane said. He came down the stairs into the light and sat on a crate of plastic wire. He tossed chips of wood at the corrugated door of the loading ramp. "I got the same feedback from Sammy and Bill," he said. "I think they're planning to leave for the free zone as soon as the weather gets warm. They talk about it like summer camp or something."

Jack's spirits sank. He had suspected as much. "Maybe it's time for the test," Jack said. They had worked hard on the thing. It had to work.

"Now?" Duane asked. Up until now there had been no discussion of any kind of test.

"It isn't that late. Meet me here in about fifteen minutes," Jack said. "The dark might give us some added advantage." Duane went to get his gear and charged the stairs two at a time.

Jack was already in the shop, and doubting his impetuous actions when Duane returned strapped into his travel furs. They spoke little in the rising tension, but attended the last details with the care of seasoned veterans. Jack climbed outside and cleared the ice and debris from the loading door

while Duane gathered a last minute assortment of tools.

When he was finished, Jack squirmed through the small window and dropped gracefully into the shop.

"The snow is up to my ass," Jack growled. He brushed the snow from his beard. "This thing isn't going anywhere with those skinny wheels."

Secretly he was glad. Being out in the open and wrestling with the lumps of frozen trash banked against the door made him re-think his priorities. He hadn't seen any flyers, but that did not mean that they were not out there in the darkness. He jumped up and down, landing stiff-legged on the floor, and chunks of ice slid out of his leggings.

Duane ignored Jack and hauled a long canvas-wrapped bundle from under the workbench. He undid it tenderly, like a mother searching for her baby in the blankets, and Jack whistled in appreciation.

"Here's your answer," Duane said. Jack squatted beside Duane and ran his hands over the long yellow skis. They were as smooth as glass. Each had carved blocks and straps that locked each wheel into an immobile support. There was a much shorter grooved ski for the steering wheels in the rear.

"How long are these things anyway?" Jack asked. They represented a tremendous amount of work. He wondered how Duane had found the opportunity to make them without his knowledge.

"About eighteen or nineteen hammer handles," Duane answered proudly. It was his idea of a joke. "Let's push it outside." Jack lamented for a moment the very real death of millimeters and feet before agreeing.

The cold rolled into the basement like jelly when Jack hauled open the steel door. All lights were extinguished, and the beast stood outlined in a soft square of reflected snowlight from outside. Duane crept out and lay the skis in place and then they muscled the vehicle up the incline and onto the skis. Duane attached them while Jack closed the shop, trying vainly to keep the rusted chain quiet with his glove. The door slid shut with a final groan and crash, and they were suddenly alone, shivering under the night sky.

The two men crouched in the snow like frozen statues. Their breath hung like cotton in the air. Jack felt icy puddles form around his unpadded knees. The stars cast only a stingy half-light upon the snow and the moon was trapped beyond the buildings. Nothing moved in the eerie silence and Jack was tense as a coiled spring.

Duane edged over to the beast and crawled up into it. He was lost from sight as suddenly as if he had been swallowed. The right ski broke through the snow crust with the added weight and the whole contraption listed. There was a scrape as something slid to one side. Jack remained stationary in the shadows.

"Anything in the air Jack?" Duane croaked out of the darkness.

"No," Jack answered. His throat was dry. "At least not yet."

Jack saw Duane's leg drop down into the snow as he tried to push. He grunted and churned in the drift. The thing creaked. Duane's muffled curses floated out into the night, but the beast didn't move.

"Rock it!" Jack whispered.

"If I had some, I would!" Duane whispered back desperately. "Anything in the air yet?"

"No. But keep pushing. I'm on the right."

Jack scrambled over to the mired ski in a flurry of crystals. He threw his shoulder into it and after a few jerks the ski

began to carve a hollow for itself. The beast edged forward, creaking as Duane struggled with the weight from inside. Suddenly the thing righted itself and glided into the empty street with a hiss. Jack floundered over to it and crawled in from the underside. Duane lay on his back panting.

"What do you think?" Jack gasped. "1500 pounds? A ton? Two tons?" In spite of the cold they both were drenched in sweat.

Duane stood in the darkness and slid back the thin hatch above. Cautiously he scanned the sky. There was no movement, no light. Nothing but the muffled whimper of a wind carving past corners on the upper stories. He slid the hatch shut, jiggling it to make it fit. Then he rummaged in a side rack and brought forth two battered police helmets. The dark plastic reflected nothing.

"I glued lead foil inside," Duane whispered. "Just in case those things can register brain activity or something." The helmet was surprisingly light in Jack's hands. He slipped it on and tightened the chin straps. Effective or not, the head guard gave him a feeling of security.

Jack joined Duane at the push bar. Together they shoved the beast forward. Pushing it was much easier than Jack had expected and the craft yielded to their combined efforts by mushing through the snow gracefully. Once they had it moving, they charged several blocks in a silent adrenal frenzy, knees high and breath ragged, afraid to speak or to stop. They found the beast light on the runners but slow to steer. They shoved through loose snow toward the open space of a parking area and avoided drifts and their hidden dangers by bumping the craft to one side. The snow was only mid-calf but the constant plowing tired them quickly. Finally Duane sagged against the frame supports and they eased to a stop. Jack grabbed a handful of snow and chewed it.

"Let's see where we are," Duane said between gasps. He slid back the hatch and peered out. He withdrew with a sudden flinch.

"Well?" Jack asked.

"Well, we are well out of the downtown area. Not much rubble. A bit of wind. Temperature is probably only a handful of degrees below freezing and I think we have a clear shot at the truckway. But," he whispered quietly, "there is one of those things almost on top of us."

"Let's get out of here," Jack whispered back without hesitation. He pulled on his furs and wrestled with his leggings. "We can make it over to some type of shelter. There used to be a charging station around here. Maybe we can get to it if we're careful." He tried to control the fear in his voice.

"But it isn't doing anything," Duane said.

"What the hell do you want it to do?" Jack demanded harshly. His voice was a nervous rasp in the darkness. They were not impossibly far from shelter and he was ready to leave.

"I think we should start pushing," Duane answered calmly. "This is a test run. Let's test. Tighten our anti-thought wave hats, and shove this damn thing onto the truckway."

"Are you crazy?" Jack fired back at him. Jack couldn't see Duane's face, but the younger man sounded as cool as the snow they floundered in.

"If anything happens we drop through the bottom and act like animals," Duane said. "It has a program, Jack, not a brain."

"You mean according to your theory," Jack replied tersely. He stood on the platform and moved the hatch to reveal a few

inches of sky. The robot was above them, menacing and stark against the flurries of blown snow. The delta shape shone along its edges with pinpoints of antique light from the distant stars. It seemed heavier, less sleek than the ones patrolling the city, but Jack noted with some relief that there were no tool clusters. He blocked out the robot with a silent angry shove at the thin hatch and crowded next to Duane.

"Besides, if we try to go directly back we might draw fire to the others," Duane whispered. He motioned in the almost total darkness for Jack to take his place at the push bar. Against his better judgement, Jack grabbed onto the braces and they heaved forward again. Each man secretly waited for the firestorm to break at his back.

"It's playing with us," Jack whispered after a few yards. Sweat burned his eyes. "We're going to be too tired to run soon."

"Let's try the sails," Duane answered.

Jack spit out a curse in the darkness. "Do you have any idea what you are doing?" Jack demanded. He did not share Duane's blind confidence. Neither of them knew anything about sailing. "This thing might not even work!"

"Well what do you want to do?" Duane shot back. His face was dripping from the exertion. "Just sit? Push until you throw up? Run shrieking into the bushes?"

"It is possible, you know, that the wind is not going to be where you want it. We could very likely wind up flat on our backs and trying to crawl off the truckway dodging heat beams," Jack said more reasonably.

"That can happen any time Jack," Duane said. "At least we're prepared." He picked his way across the platform to the front of the craft and pulled the sails into position like dark pennants. Jack cringed inwardly. The sails unfurled but failed to fill. They hung loosely to the sides like embryonic wings. Duane checked the wind indicator dangling on the inside of the cabin and turned the bellcrank to compensate. There was a gentle flapping. Then the sails blossomed with a dry crackle.

Jack felt a tug. It was easy at first, then alarming as the craft balked at the pull. The braided plastic ropes stretched and allowed excess play on the thin masts. They bent dangerously and there was an agonizing squeal as a hidden brace surrendered to the forces testing it. The sound was painful to Jack, like the fracture of his own rib. Instinctively he threw his weight on the push bar. The beast moved jerkily at first, the skis at odd angles with the wind. But it kept moving with a rude shove to his rear and sliding so that he had to grab to keep from falling away from under it. Jack hoisted himself up onto the low platform inside and stationed himself at the steering paddle. The beast lurched along in a symphony of pops and creaks as the irregularities of the frozen surface flexed the frame.

Like a glittering stone, independent of the wind, the ice, or the efforts of the alien life forms below it, the flyer hung silently above the men. A single aperture dilated open from the bottom of it and a rod clicked into position like a platinum stinger from one of the wing points. There was a faint glow along the frontal lens for an instant as the flyer dropped several feet down and to the rear of the craft. Then, apparently satisfied, the appendage was retracted with a snap.

Thinking only of the fact that he was moving faster than he had in years, Jack altered their course for the truckway. He leaned on the paddle and felt the rear runners bite. The snow blurred under them, and he forged a graceful loop of parallel tracks in the white. The sails flapped at the change in direction and the craft slowed for a sickening moment as

Duane adjusted the ropes. They surged ahead and Duane was forced to hang on to the bulkhead supports to keep from falling. He giggled nervously in the dark as the beast trundled forward with the wind at its back.

Outside, in the bitter chill, the alien machine kept pace.

The furred mound of the beast gained the truckway with a bump on the runners and sails outstretched like balancing arms. It picked up more speed on the flat surface, straining in the thick cold air and reeling in the distance with a long rush under the skis.

Jack fought the urge to whoop as he squinted through the front slits. Visibility was limited and a confusion of bleak angles and grey shadows blocked most of his view. He thought perhaps his glasses were fogged. Then, with a chill in the pit of his stomach, Jack realized that danger lurked in the dim moonlight. He had seen it many times as he scanned the city from his rooftop refuge. A massive interstate barge had overturned years ago. Its cargo had long ago been scattered but the ruin spread across most of the five lanes. The fragile craft was dwarfed by it. They accelerated, propelled by a fresh gust, and the wail of the wind across the lethal reef of ice and twisted steel was ominous.

Jack leaned on the steering paddle with white knuckles just as Duane shouted a warning. The rear ski skittered ineffectively across an ice patch and the steering control went limp in Jack's hands. Before he could move, the ski bit once again into snow. The paddle nearly wrenched his arms from their sockets as Jack fought for control. The beast responded with a crazy spin.

Duane lost his footing and crashed to the platform in a tangle of arms, legs, and curses. The craft tipped. The wind caught them on the underside and Jack had the curious sensation of floating as they shot along with one ski taking the empty air like a clumsy dancer. After a few helpless seconds, the craft righted itself and crashed to the snow with a brain-numbing jar. It slid to a stop with a scrape on the runners and a bright yellow rope slithering along behind it.

Duane hauled in the sails with shaking hands. He and Jack sat in shocked silence while the wind howled off the flapping aluminum skin of the wreckage only a few yards away. Only then did the two men consider the other, more vindictive danger floating above them. They could only wait.

After a few moments, Duane peeked through the hatch. He was careful to keep the pale blotch of his face from the opening. In the moonlight Jack could see that Duane's mouth was bleeding from his fall.

"I can't see anything in the air Jack," Duane whispered.

He withdrew quietly. The wind was stronger across the open spaces and the craft rocked from side to side with each gust. It sat conspicuously dark and isolated in the lee side of the wreck, like a pool of crude oil on the whiteness. The masts and rigging hummed like insects. Duane covered the floor with a thick fur flap and the inside of the creature was snug. He was still shaking and he held a piece of ice to his swelling lip.

"I suppose this means we can leave now," Duane said in the sweaty darkness. He sounded like he really meant it.

The remark caught Jack off guard. Leave to where was still the question. Through the slits Jack saw the ruined transport barge, and in the distance, the city. From where he sat, the city was unmistakably abandoned. A phantom of sagging walls and piled drifts. And at his back was the melancholy rattling of the ruined transport. The relic reminded Jack of the sprawled carcass of a great sea creature, caught in the rocks

and picked apart by the birds. Filaments of soundproofing spilled from around the crew cab to snap in the wind, and corroded flywheel magnets clustered along the exposed bottom like giant barnacles.

Duane lit the candle lamp hanging on a cord above them and spread a tattered road map on the clear space of the low platform. He stroked it with a blunt finger, tracing a route. "We can go west, to the mountains," he said.

Jack listened to the enthusiasm creep into Duane's voice as the younger man carefully unfolded more of the faded chart. Jack rubbed the back of his neck where his helmet chafed and he tried to think. They had food and tools. They wouldn't freeze unless they were stupid. Some of the old frustration and anger returned as he watched Duane trace the bright lines and legends for vanished towns and populations. The land was empty. There was none of the old life left. No power complexes, or people or charging stations or tube routes, not even a place to walk. Jack wondered if he and Duane had really escaped anything at all.

"I mean," Duane said cautiously, "why go back now?" He looked over at Jack, trying to figure out what he thought behind his frown. Jack grunted noncommittally. "We can come back, Jack," Duane added, sensing the other's uncertainty. "With a little luck we might even give our friends an alternative to that long walk east they're planning."

Jack pictured the humans sleeping in the ruined buildings beyond and wondered at their future. He wondered at his own. There was no reason for him to feel like a poacher on his own planet, to be hunted like some kind of outlaw simply because he was a mammal with a brain. He shoved aside the frozen flap on the floor with a theatrical sigh.

"You're right," Jack said with a nod. His glasses sent flashes darting like minnows around the inside of the small craft. "We had better get started." Jack dropped down to take his place at the push bar.

His foot brushed against something buoyant and a tingle shot from ankle to thigh. He flinched, like a man who steps on the cat in the pre-dawn darkness, and found himself clutching at nothing for balance. He hit the ground with a meaty thump and saw that he had practically dropped on top of the alien flyer.

The machine hung in the frozen air level with the bottom of the flimsy craft, and face high to Jackson Pierce. It had the terrible utility of an axe head drifting loose in the night. A pale flicker of light played across the frontal lense. Jack swallowed dryly and sat perfectly still in the glare. There was nothing else to do. He was trapped in his own nightmare. Over the pounding of his heart, Jack heard Duane chuckle from his perch on the platform and he realized that it was probably the last sound he would ever hear.

Duane's laughter stopped with a hiss. Suddenly Jack felt himself hauled straight up by his loose furs and thrown into the dim cabin. He tucked and rolled to one side, mind blanked to all but survival. A faint hum followed him and filled the cabin, seeming to resonate off the hide walls and birch stringers.

The alien robot was precise. It bumped the craft. It was looking for clues. In its class of things known as buildings, it was not specific. Its mentality allowed only that it seek out bio-entities keyed to its destructive patterns. Aside from flickers of movement in the brush along the truckway as small creatures foraged, Jack and Duane's creation was the only thing that moved. The robot had followed it.

The interior of the cabin was now lit almost entirely by the light from the flyer. Jack was lost. He knew what the alien machine could do, and what a man could do in return. He looked wildly around for his kneepads and gloves. Duane stared down, transfixed by the glow. The gleaming hump of the robot nudged at the floor opening with a staccato chatter that sounded chillingly like mandibles.

"It's going to wreck us," whispered Duane. The beast rocked with each touch of the robot. Independent of the rest of his body, Duane's hand crawled slowly to the heavy fur mat rumpled beside the entrance to the cabin. He flipped it open without a word, and fell forward onto the machine. Jack gasped. It was as if Duane were trying to smother the alien light with a blanket and a body. As if the glow were a simple kitchen fire. There was a grunt and a muffled shout as Duane hit the snow pack under their craft.

Jack tumbled to the snow seconds behind Duane, unsure of what to do. The wind battered its way through the wreckage, whipping ice crystals into his face and moaning over the entire scene. Any intelligent man would have crawled away.

Jack shoved at the escape craft. He felt the skis break from the ice and the beast coasted away on the wind. Then he ran to Duane. Duane was wild-eyed. He had completely shrouded the alien killer with the heavy fur blanket and it twisted and bounced under him like an animal on the cracking ice. Jack recognized the sound the robot made from his time on the production lines; over-worked gyros. He helped Duane wrestle the robot down onto the snow and he felt in the machine's wild gyrations the desperation of a drowning man. The muted hum of the gyros became a shriek as the robot struggled with Jack's extra mass. The machine was easy to pin but practically impossible to hold.

The alien robot tried to rid itself of the thick mat of fur that confounded its sensors. It became hot. The fur steamed, and then it stunk. Jack saw fear in Duane's eyes. They might as well have been clutching a live cobra to their chests. If the thing floated free above them, or if it burned away the covering, they were dead men.

Duane was exhausted. He was slipping from the flyer as it bucked and Jack felt the weakness burning in his own arms. Something had to be done, and quickly.

Jack shoved Duane aside and smothered the robot with his body. He grabbed the robot flyer in both arms, grasping it by the wing tips while his gloves steamed. With Duane's help he stood in a crouch. The alien machine was light, exceptionally light, but it fought him at every touch, seeming to feed on his own frantic efforts to keep it still. Bits of the fur blanket slid away and smoldered in the snow and a sharp hot pain scorched the flesh of his right arm. Jack held on with a strength he did not know he possessed as the robot surged against his chest, twisting fiercely in its attempts to gain the air.

Jack steadied himself as best he could on the wind-scrubbed ice, put his head down, and ran. He felt the oven heat of the alien robot begin to burn through his own furs and he counted seven stumbling steps before the wreckage loomed like a cliff next to him. Jack skidded into the barge and pressed the killing machine against the flywheel magnets still clustered around the ruined drive unit. He hugged it there with his body. He could only hope that the complex electric memories and instructions inside would be hopelessly scrambled.

The robot hit the magnets with a padded chink and was instantly cold. It fell to the snow at Jack's feet in a stinking

bundle of charred and dripping fur. It did not move. Jack stared at it, gasping for breath. And Duane stared at Jack.

Instinct told Jackson Pierce that the robot was not meant to be caught or dismantled. When the alien machine began to hum again, Jack ran past Duane and grabbed him by the arm. They had almost reached their craft when the explosion pitched them on their faces. The night was shredded by a brilliant destructive flash and a thunderous bark. And then there was quiet. Bright bits of metal foil floated with the snow. Even the wind seemed to whisper.

Duane was first to speak. "It didn't know what we were Jack," he said. Jack just nodded and got slowly to his knees. He was totally exhausted. "And it couldn't see through that. . . bag I had it in." Duane went on. Jack helped Duane to his feet and they walked slowly toward the dark hump of the beast. "How did you know about the magnets?" asked Duane excitedly.

"I didn't," Jack answered with a hard edge to his voice. "But I do think we should get out of here before we are forced to do this again." His arm ached where it had been injured. It wasn't serious, but he was leaving a trail on the snow of small dark droplets. "You push and I'll steer," he said to Duane. "We can find some trees or something to camp in tonight."

Duane laughed. "Like Indians," he said.

"Yeah, Indians and retired businessmen," answered Jack with a snort. He paused to scan the night sky warily before crawling into the security of the fur covered craft. Inside it, he and Duane adjusted their furs against the cold.

As they pushed across the frozen waste of the truckway, Jack scowled through the upper hatch at the Big Dipper. He tracked across the vast dark spaces until he found the North Star hanging like a beacon over the pole, and he nudged the steering paddle until they were headed due west. The craft whispered easily over the snow, creaking in the wind, and Jackson Pierce smiled broadly.

At least two had come to reclaim their planet.

—G—

A Few Minutes After Midnight At The Oasis

Patrick Henry Prentice

PROLOG

THE YOUNG MAN WAS SLEEPING BADLY. He twitched and whimpered. Something buzzed at the back of his mind, on the edge of consciousness. Was it a dream, or—

The woman!

His eyes blinked open, instantly alert. Above him was the night sky, stars glimpsed through the arching palm trees, wind: the strange, dark wind of Tisqat. . .

Then: thinking he saw a gesture somewhere in the middle distance, he started to rise, but looking again, he saw—

Nothing.

The woman was gone. Her fire was gone, her blankets, everything.

He squinted into the darkness, puzzled. Remembering, his joints heaved and ached, his heart pounded. But she was gone, he was sure of that. Damnation! Gone, without one word between them.

Ah, the fabled spooks of Tisqat. . .

He shivered mightily, as befits an Arab prince, and settled



Barclay Shaw

down again, and tried to dream.

LDG

OUTSIDE, THE SUN WAS SHINING brightly on the Southeast Quadrant.

Inside, the Caliph Allepo was sitting at an upper window of the Imperial Palace, watching his land blow away. His expression was sour. He was eighty years old, and almost as dried up as the land he ruled.

"Look at that," he muttered, turning to the young engineer from Tehran. "If it isn't nailed down, it blows away. No rain now for thirty years. Dust and mica and bone."

"That's just the point," said the engineer.

"What's the point?" the Caliph Allepo snapped. "You have no point. You come here and mumble to me about power—more powerful than oil, you say!—while the land of my forefathers is turning into a cinder before my very eyes!"

"The point," said the engineer carefully, "is that if we could only locate this...power...Well. We think we can figure out how it works and use it."

"And bring the rain back, no doubt."

"Perhaps."

"And transform the Southeast Quadrant into a paradise of sweet figs and oranges, doubtless."

"Maybe, maybe not. I'm sure the Shah would assign it the highest priority."

"Fuck the Shah," said the Caliph Allepo gloomily.

The engineer shrugged.

"Look," said the Caliph Allepo wearily. "You tell me there's this new power, or maybe there's not. You think there is because airplanes have disappeared, and because there are rumors that the Indians are working on it without telling anybody else. Maybe it can bring back the rain, maybe not. Too damn many maybes!"

The engineer shrugged again, patiently. He was a patient man.

The Caliph Allepo continued. "I say airplanes have always disappeared. It is called crashing in the desert. And Indians have worked on projects without telling anybody else since the dawn of time; it is called paranoia. You fellows in Tehran are just jumpy, that's what I think. You've got Hindus on the brain."

"As I've said, we've had reports."

"I don't give a camel's ass for reports," the Caliph Allepo replied. "Dr Hindus. Dr airplanes. Dr, for that matter, rain. Let the sky be filled with thunderheads tomorrow! So what? Too damn late for that now."

"You can at least let us look," the engineer said in a reasonable tone. "We'll send a team to that sector, spend a few weeks sniffing around. Where's the harm?"

"No harm. It's just that I don't want you bums from Tehran running around my Quadrant."

"The Shah will be...aggrieved."

The Caliph Allepo snorted mirthlessly. "Let him fly into an Imperial Fi! By the time he mounts an army of his truck drivers and gets over here I'll be dead anyway, and so will most of my subjects. Let him take the Southeast Quadrant and her twelve hundred refugees and her three oases and her five quonset huts. He'll have earned it. He can even have what's left of my harem—three aging hags from Cairo, one Ethiopian feebler, and one Jewish witch. And may they curse his seed as they've cursed mine."

The engineer frowned, wiped his spectacles, and then,

feeling that the Caliph's irritation would pass sooner or later, he began to talk soothingly of the charms of power, and of the prospects for a reinvigorated Federation to replace the fragmented fiefdoms which had been their common lot since the Seventh War. But the Caliph Allepo wasn't listening. He had gone back to a watery-eyed survey of his domain, or what was left of it.

Sand, in every direction. A flat shimmering blast of dull gold broken only by the faint humps which were the remains of tanks and jeeps and trucks lost in the last war. And farther out, he was sure, were the gutted remains of some of the Shah's once-mighty armada of F-128's—the vanishing aircraft which the engineer had mentioned. The desert was a graveyard, not a conjurer's field. The secrets it kept hidden were the bones of men, and not some magical force like anti-grav, as the engineer had implied. Of that he was sure.

A more sucked-out, useless piece of earth he couldn't imagine, yet the kids from Irania still came to him with their truck-driver dreams of power.

Well, he didn't give a hoot about power anymore. At least not of the kind a nation of mechanics boasts of delivering. Propeller power, he called it. A truck-driver might be able to take an atom of plutonium or a molecule of oil and harness its dance into heat, and maybe launch some projectile or other. But aside from that traditional knack they were as barren a race of men as Allah had ever invented, reflections of the land their schemes had wasted, stolid, unimaginative, sexless.

Sexless...

The Caliph Allepo almost groaned aloud in pain. He was eighty years old! If there could be a more troubling thought than that, he didn't know it. To think, the Stallion of the Southeast Quadrant on his last legs, ready for the pasture and then some. He might as well be tethered in the desert, grazing on sand. The image of a dried-out mushroom which spurted clouds of dust when squeezed stole into his mind. He shuddered. How was he to reconcile the memory of himself as a young man, whose blood churned at the mere thought of a woman's hand, with the wasted whey-pumping old goat he had become?

With great difficulty, he decided. And not without a fight!

"Bring me the Jewish woman!" he shouted.

Heads bobbed up, blinking. The engineer paused in mid-sentence.

"And show this Iranian pulley-pusher to his quarters!"

"You'll think about what I've been saying," said the engineer, rising.

"I'll think," the Caliph Allepo agreed. "And if you and your friends can figure out how to make a machine—a real machine—one that has the power to put back the juice in an old man's pecker, then I might even agree to spare your miserable hide!"

He watched the engineer, frowning and bewildered, retreat. He allowed himself a satisfied smirk. It was comforting to know that at least a few shreds of his political power remained. He could still order people about, and act in an arbitrary and ornery fashion when he chose. That much, at least, was left. As to the other...

HE WAITED FRETFULLY, in a dark humor, for the arrival of the Jewish woman. Nothing would come of it, of course. Nothing ever did. But he liked having her around. She was saucy, impertinent. She told a good story. And you couldn't find a better looking woman anywhere.

"How come this was never known . . . how could it have eluded the Americans, if it's scientific fact?"
"It looked too much like magic for the Americans."

His only regret was that she had come to his attention so recently, when his ardor was at its lowest ebb ever.

How long had it been since she had wandered into the compound? A few months perhaps, maybe less. He couldn't remember. His sense of time had stretched like the rest of him. Even the circumstances of her arrival seemed uncommonly hazy. Of course, she had been lying when she had insisted that she had come on foot—from the Tisqat Oasis, no less. He chuckled at the transparency of her deception: Tisqat was about forty miles away, a tiny spring of bad water and a few skeletal palms, marooned at the center of the encroaching sands, too far away to be of any use. But why had she lied?

The general opinion of his subjects was that she was a Jewish spy, a member of one of the marauding bands of Zions which now and then kicked up a little dust on the flanks of the Federation. Doubtless she had been sent to entice and befuddle their rapidly dwindling leader, and drain him of any will or reason he might have left. So thought the people, and they were probably right. What they didn't know was that a man his age and in his condition couldn't afford to keep the expensive political scruples of his youth. Beyond a certain point even an old militant like himself would just as soon sleep with a spy as a sow—particularly when he had no state secrets left to divulge.

While he waited, the Caliph Aleppo hummed to himself in nervous snatches: something between a song and a prayerchant. For he never felt completely at ease when he sent for the Jewish woman; and it had nothing to do with anticipating a sexual collapse or the fact that she was likely a spy. It was something else. She reminded him of something.

Or someone. He let his mind wander, not quite making the connection. He imagined he saw palm trees, young and green and fruitful like they'd been in the old days, rooting into deep rock water; the smell of honey-cakes, hashish, tea. He felt the memory hunching on the edge of consciousness, just beyond reach. A fire, black eyes shining in the firelight, long ago, long—

"Say what?" He looked up, startled, mouth flapping.

The Jewish woman stood before him, smiling her witch's smile.

"Don't sneak up on me like that!" he growled. "Zion bitch! Sent to put the old fart out of my misery!" A pause. "Well, if you can put me out of my misery, so much the better. Come," he said, lecherously, "come on and help pull an old goat's bladder of a man out of his misery."

She moved closer, swaying above him. Magic!

"I hear you were talking with the Iranian engineer just now," she said.

"Affairs of state," he replied, peevishly. "They don't concern you."

"That airplanes have disappeared was mentioned, I believe."

The Caliph Aleppo slumped back against his cushions,

feeling extremely weary. What had happened to the fine art of politics and diplomacy, he wondered, when a common harem girl knew as much about high-level talks as those who conducted them? A sorry state of affairs, indeed. He watched without interest as the woman rolled back the cuff of her fatigue-green shirt and consulted her watch. She pursed her lips thoughtfully.

"One of the dilemmas of power," she said, finally, "is that one never knows quite how to wield it. Precisely where and how one fits into the scheme of things is never entirely clear. Should one meddle, or leave bad enough alone?"

"Here, now," he said. "Are you implying criticism of my regime?"

She smiled. "I was thinking of myself, actually."

"What do you know of power?" he snorted.

Again the smile. "What do I not know?" she replied.

The Caliph Aleppo pounced on that one like a cat. "If you are adept at power," he cried, "then prove it! Work your wiles! Make my blood rise!"

"I cannot. You are too old."

"Too old? Zounds! To think I'd hear that from the lips of one of my own women!"

"Is it not true?"

"Of course it's true! But I choose to disregard it, and so must you!"

Again she consulted her watch. Those damn fatigues! If only she would wear something bright and seductive, he might stand a fighting chance.

"What's this?" he said in mock bitterness. "Is my time up?"

Tapping the face of the watch, she smiled her Jewish witch's smile. "Very nearly, I should think," she said. "Old man, I would like to help you. I am helpful and meddlesome by nature, and not altogether unmindful of the kind of man you are, and used to be. But I am not sure, precisely, how to proceed. That is why I hesitate."

"Hesitation be damned! Do your stuff!"

She paused, considering. "I'll need a jeep."

"A jeep??"

"I could make it on foot. I have before. But you will need a jeep. Or truck. Or rusted half-track."

"Talk sense, woman! What is it that you need this vehicle for? I'm too old for that sort of thing!"

"Too old to take a ride to Tisqat?"

"Tisqat?" He regarded her blankly. "What do I want with Tisqat? What good is an oasis if the blood won't rise?"

She shrugged. "It's the only place I know where it might."

The eyes of the Caliph Aleppo grew cold and crafty. "Woman, you are lying to me! You've lied since the day you set foot in this compound. You want me to drive out into the desert with you so that your companions can ambush me, steal my fiefdom and enslave my people! I may be a doddering old fool, but I'm not an idiot! If you've got the means to make my blood rise, then make my blood rise

here!"

"Haven't got the means," she said.

The Caliph Allepo slid back into the cushions, exhausted. It had been an exhausting day. He remembered that perplexity never had agreed with him.

"Get out of your bed, old man. Put some cloth around those withered limbs and take me to the Tisqat Oasis in a jeep."

"Madness."

The woman said nothing, waiting.

His mind turned somersaults. He thought about things he had not thought of in years. "Woman," he cried, finally, "who is it that you remind me of? I feel my blood boiling as it did in ancient times, before the Seventh War, before the Fifth War, even, Palm trees. My brain is crawling with palm trees! Water. A fire! Was it then? There was a time at Tisqat, before the Sixth War... Was it then, that time, in those days...?"

"Send for a jeep," she said. "Make sure it runs. Have some bread and two canteens of water put in. Figs, if you like. We leave tomorrow afternoon."

The Caliph Allepo rocked back and forth on his heels, holding his head tightly, as if it were infested by demons. His mouth clapped open and shut, puppet-like.

"It was the Tisqat! I was a young man, then, hardly out of my teens! I was on my way to the Pan-Arabian Conference in Beirut! I made the first leg on camelback, switched to a jeep, and arrived by private jet—a public relations stunt to symbolize our influence—out of the desert's depths and into the planet's councils."

"Have someone prepare the jeep," she said.

"On the first leg I decided to spend the night at Tisqat. A poisonous place! There was only one other fire. A black-haired woman knelt before it, humming a song, murmuringly seductive. I was inflamed! My loins heaved and ached!"

"But she was a Jew," the woman said. "You thought if you slept with her you'd get the scabies."

"Or worse," he agreed. Then: "How did you know she was a Jew?"

"I know a lot of things I've no business knowing."

In the back of his mind there was a buzzing sensation. He felt momentarily faint. His voice was shaking when he spoke.

"Send for the jeep," he said.

THE SUN HAD BEEN THUNDEROUSLY hot all afternoon. Under its flowing white headdress the skull of the Caliph Allepo throbbed furiously, his old limp blood beating a steady tattoo against the timeworn arteries. Fortunately, the woman had turned out to be a fairly skillful driver—which was odd, considering that there hadn't been more than a handful of jeeps in the Southeast Quadrant in fifty years. This observation had more or less convinced him that the judgment of his subjects was correct. Who but a member of a Zionist Tactical Unit could have learned to accelerate and shift the gears so smoothly that the vehicle rose and rolled down the dunes like a sled?

It had been on his mind, but not heavily, that he might be dead before nightfall. So he had asked her straight out if she was a spy.

Her answer, he thought, was unnecessarily elusive.

"I am neither agent nor provocateur, nor assassin. I am not that kind of spy."

Still, her tone had cheered him some. It was altogether too merry to belong to a scoundrel. Perhaps she was on the level after all.

In mid-afternoon she stopped the jeep at his request and allowed him to unfurl his prayer mat and make obeisance to Mecca. The rest of the journey was made in silence; it was difficult making oneself heard above the whine of the engine. Left alone with his thoughts his temper improved considerably, and by the time he caught his first glimpse of Tisqat his spirits were higher than they had been in years.

As the jeep skied down the final slope, his rheumy eyes could barely make out the shapes of the sparse vegetation, clumped low to the ground: a few stunted palmettos, and the squat silhouettes of the dwarf fig—a ghastly mutation of recent vintage, whose fruit was inevitably mealy, and sour. Not that Tisqat had been any paradise in the old days, either; it was a third-rate stopover by any standards, with a reputation for spooks and brackish water. Yet even the Caliph Allepo had drunk there, in the days of his glory.

He felt a stab of pain. So much had happened, so much gone wrong. Who could have known then, in those exultant days before the Sixth War, that Allah's Will would work its way through history with such astonishing deviousness, leaving scores of cindered cities and a half-dozen nations of carrion in its wake? He found it hard to comprehend. Was there perhaps some larger battle going on, some brooding and invisible cosmic clash being waged at the very edges of the universe, pitting the Divine Essence against the false god Jehovah for the souls of men everywhere? Could it be that the Supreme Ineffability, like most of his human servants, was just a bit of a bungler? Or had he missed some essential subtlety?

"We must leave the jeep here."

She helped him out, her fingers cool and capable against his bony wrists. In the eastern sky the light was failing rapidly. She led him over the dappled sands to within twenty meters of the spring, paused as if to get her bearings, then guided him twenty paces to the north. There she stretched out a military-issue sleeping bag, and two soft cushions from the palace, re-arranging them until he was comfortable. Watching her standing over him, seeing the milky whiteness of her face and hands, the suggestion of ripeness under the worn fatigues with their flaps and pockets, he felt the faintest hint of desire taking shape in his ancient loins.

"Allah be praised," he murmured. "Jehovah, too."

It was still not clear to him what he might expect; nor did it much matter. In the presence of this strange woman, in the strange dark air of Tisqat, he felt oddly serene.

He dozed for a bit, awoke to find a small fire, the woman bending over it, stirring tea in a small black pot. Overhead, behind the palmettos, he could see the moon rising. They ate, slowly, enjoying the silence, and then he must have dozed off again, because he never heard the approach of the two jeeps, nor the whispering among the men as they spied the woman; he awakened only when he heard the familiar, patient voice of the Iranian engineer, asking the woman politely (though at gunpoint) to tell him the secret of the Power (it was uttered reverentially) or he would be compelled to blow their heads off.

IT WAS HARDLY THE TIME for stories, but the woman insisted.

"Let's make it a true story," she said. "Let's tell it together."

In light of their circumstances, it seemed an odd request; yet his mood was such that he was prepared to follow her lead blindly, no matter where it might take them. He had begun to

A FEW MINUTES AFTER MIDNIGHT AT THE OASIS

“Fire and smoke were everywhere. Men flew about, screaming, shouting orders, dodging the heavy metal rain which tore the trees and sand to shreds.”

realize, for the first time, really, what a singular sort of person she was. The appearance of the engineer and his goon squad had hardly fazed her. Perhaps, he mused, she had even anticipated their arrival. Certainly, she had been quick to accede to the Iranian's demand, telling him that she would show him all he'd ever want to know about Power (uttered mischievously) and then some. Would midnight be convenient? It would. And would he perhaps care to join them round the fire as they swapped anecdotes? He would not, preferring to keep company with his own kind, from a safe distance, where he could keep an eye on them.

She began the story thus: "There was once an Arabian Prince, who was travelling across the desert on a camel, in an age where every—"

"—Every self-respecting Arabian Prince had half a dozen Cadillacs," he said, smiling. "Allah be praised. I know this one."

"He was on his way to a conference in Beirut. It had been called to demonstrate the solidarity of the Moslem peoples in the chaotic days following the Fifth War. On the way he stopped at an oasis to bed down for the night. It was a setting much like this one, the place deserted except for one other person, a woman, who knelt before a fire, singing nameless songs while she flattened dough for honeycakes with the heel of her hand."

"Her hands were strong and cool," he said. "He wished that they were kneading him."

"Their fires were fifty feet apart, yet neither of them spoke a word across that distance. Let's say shyness, or some habitual reserve prevented them from making the first gesture."

"Let's say he hated Jews," he said.

"They watched each other closely, she singing and baking, he smoking his pipe, neither comprehended what it was, exactly, that prevented two solitary figures by a spring in a barren land from sharing the same fire."

"Or the same bed," said the Caliph Aleppo. "He wondered on it half the night. He dozed, but fitfully. Then—it must have been around midnight—he awoke with a start. The fires had gone to glowing coals, with little light left in them. The moon was almost down. Instead of calling it lust, let's say he was possessed by a deep aching, a tremor of the spirit as much as of the loins. He sat straight up, and peered in her direction. He thought he saw movement, perhaps the flash of a hand, perhaps beckoning him. He could not be sure."

"If she were calling him, she should have called. The night air was murky. A gesture wasn't enough. Yet even so he rose, took one hesitant step—"

"Then stopped! For no apparent reason, he was suddenly overwhelmed with fear, not of the woman, but of the place. He felt as if the wind was filled with ghosts. It was spooky! So he retreated."

"And in the morning, when he awoke, the woman was gone."

"Yes. Fire, blankets, everything. Left in the middle of the night without a trace, as if the thought of waking under the same sun with an Arab had driven her away, on foot, into the desert. Ah, she was a witch, that one."

"She was a witch," the woman said. "So in the morning the Arab prince packed his gear, mounted his camel, and went to Beirut, where he made a rousing speech pledging eternal enmity between the sons and daughters of Allah, and the canine offspring of Jehovah."

"Everyone was doing it," he remembered solemnly. "Rousing speeches were the order of the day. There was a festival atmosphere. It was hard to believe we'd be taken seriously; the world thought Arab rhymed with rat." He paused, and scrutinized her face. "But there's more to this story. What about the woman?"

"Ah, yes, the woman. It's the same story all right, but there's a twist, an unexpected kink. Listen: when she woke up it was neither dark nor light; nor dawn nor sundown either. It was a strange, chattering kind of radiance, like nothing she had ever seen. She felt disoriented, halfway mad, as if she had not truly awakened, but simply moved from one level of a complicated dream into another: the dreamer dreaming she was awake. She blinked, pinched and slapped herself, but she could not shake that eerie light from her eyes, or the uncanny impression she had of speed."

"Speed?"

The woman nodded. "Yes. But an impression was all it was. Then, unable to convince herself that she ought to go back to sleep and let that dizzy dream unwind in its own time, she stood, and took a few faltering steps away from the fire. Instantly the light brightened, became more luminous, and her sense of disorientation became complete. She was terrified. She turned and rushed in the opposite direction, stumbling over herself, and ended up by sprawling headlong in the sand."

"As she raised her eyes she could see the whole strangely glowing sky, which was suddenly, unaccountably filled with great fiery bursts. As she looked more closely she could see the ghostly shapes of figures, dressed in green like soldiers, flitting about at incredible speeds; and beyond, in the middle distance, she could make out the intricate maneuvers of tanks and jeeps, moving at a speed no tank or jeep ever moved before. I tell you: that was one frightened woman. She thought she must be mad."

"Time passed; who knows how long? Then, hoping that she had some shred of her wits about her, she rose; and as she stumbled forward, the movements of the tanks and jeeps and men slowed until they seemed almost normal. Then, suddenly, she heard the deafening sound of cannon and machine gun, and she realized that she had somehow dragged herself into the middle of a battle."

"Fire and smoke were everywhere. Men flew about, screaming, shouting orders, dodging the heavy metal rain which tore the trees and sand to shreds. Perhaps something

struck her. Or perhaps it was the noise, or simple shock. Anyway, she collapsed, unconscious, and when she came to—how much later she couldn't say—most of the soldiers and tanks and guns were gone. Only the dead and mostly dead remained.

"For a while she simply wandered around in a daze. She could not bring herself to believe that the cries she heard came from real men, and not phantoms. But they were real. So, still uncomprehending, she helped them as best she could, cleaned and fed them, held their heads in her lap while they died. A few survived, perhaps. She wasn't there to know...."

"Wait a minute," said the Caliph Allepo suddenly. "She...she sounds like the one they called the Tisqat Princess! There was a story going around about a woman who nursed the few remaining survivors after the Siege of Tisqat, then vanished before the medical corps came in. But that was years earlier, during the final stages of the Fifth War—a legend from my childhood!"

The woman smiled. "The Tisqat Princess, eh? I like the sound." Absently, she stirred the fire. "It must have been on the second day, around about noontime, when the woman left. She had no choice, you see.

"She was sitting near the place where once, a magically long time ago it seemed, she had sat and tended fire and watched an Arab Prince smoking his pipe. There was still an air of bafflement and shock about her, and she returned to that spot, again and again, as if it were charmed; as if by meditating there the battle's aftermath might vanish as mysteriously as it had appeared.

"On that second day, without warning, she was taken away again. Yes, taken; though she didn't yet know the name or nature of her abductor. She was just sitting there, when all of a sudden the light dimmed and brightened, fluttered, as if gathering speed; and then attained that monotonous, flickering, twilight cast. There was no sound to speak of. Only the faintest suspiration, like gas escaping.

"She held her ground at first, sitting stunned and immobile, scarcely believing what she saw. She saw the oasis wither before her eyes!

"The trees retreated, shrinking into stubs, then the merest nubs which the sand quickly blanketed without a trace. The spring backed up, diminished to a glaze and then was gone. She was now sitting in the middle of a desert which stretched to the horizon at every side.

"She was not so scared this time. Her mind felt cautiously alert. She began to move around, slowly, crawling on her hands and feet. She discovered that she could make the images around her speed up or slow down, depending on where she moved. On bleeding hands and knees she traced the outlines of a circle, fifty feet across.

"At the perimeter, the world (if it was the world) seemed close to normal. The cloud—yes, clouds!—and the sweep of the sun across the sky seemed to move at the old remembered speeds. She was sure if she had crawled another foot across the boundary she had set for herself, she would have found herself in normal times.

"But she held her ground. She completed her exploration of the edges, and then, her mind already calming, almost sure of what it would find, she plunged towards the center.

"*Aaiii!*" It was like a maelstrom in there! As she groped towards the center the bright light brightened even more, furiously luminous! That pulsing, flickering radiance accelerated to such terrific speed that she could no longer

distinguish the crests of the waves from the troughs: at the center it was all the same, steady and even, birth and death, comings and goings, waxings and wanings, the astounding ebb and flow of the universe...."

The woman paused, stroking his forehead absently. She turned her gaze to the second fire, caught the eye of the engineer, who waved, pointing to his watch. It was almost midnight.

"Sire," she whispered, "if you haven't understood a word I've said...trust me for the rest. It only *seems* like sorcery, as an eclipse once seemed the blackest magic. The truth is almost humdrum; it's just the earth following laws we haven't even guessed at."

The engineer had disengaged himself from his group and was ambling over, his rifle cradled loosely in his arm.

The woman glanced at her watch. "Let's just hope the timing's right," she said. "Or—"

She stopped. The Iranian stood above them.

"Well?"

She rose to her feet, pulling the Caliph Allepo with her. "Well, you wanted to know about power."

"Yes."

"The power to make things...disappear."

The engineer nodded, slowly. "That seems to be one of its functions, yes. There may be more."

"There are more," she said, intently. "And will you be satisfied with a hypothesis, before we part company? Is it enough for you to know that—" She paused. "That we don't move through time; time moves through us—"

The engineer laughed, almost shyly. "No. I will not be satisfied with such...hypotheses."

He barked a command over his shoulder, and three of his companions sauntered over, grinning among themselves as if enjoying some private joke. There was a sharp, metallic sound as the engineer drew back the bolt on his weapon, and swung it in the direction of the Caliph Allepo's legs.

"There will be no more stalling for time," he said, coldly.

"I see." The woman pursed her lips thoughtfully. "Very well. I will show you power. But you must listen, and listen carefully, before you"—the woman smiled—"disappear."

"Eh?" For the first time, the engineer looked slightly nervous.

"Imagine this," the woman continued. "Twelve ghostly spokes, or beams, running through the earth like nails of light through an orange. Where we're sitting, here, is the headend of the Fourth Spoke. The Fifth's in the Orient, the Ninth in Mexico. Now imagine that at periodic intervals, the earth's...heart...beats!"

"Mumbo jumbo!" snapped the engineer. "Talk sense!"

The woman flicked open her shirt cuff, and tapped the watch with the glowing red numerals. "Let's put it in terms you can understand. Let's begin the countdown...now!"

"Countdown to what?" The engineer smiled shakily.

"*One!* The First Spoke pulses in the Antarctic, shifting snow."

"Woman, I'm warning you—"

"*Two!* The Second Spoke throbs in the Caribbean, carrying with it a sea anemone and a sponge!"

"Stop! Now! Before I—"

"*Three!* The Third Spoke flashes in the Sea of Japan, carrying away twelve fishermen and a whole school of dolphins..."

The engineer brought his rifle to his shoulder. "I insist—" "Four!"

From the corner of his eye, the Caliph Aleppo saw a sudden rush, a blur, and in a twinkling the three Iranian soldiers vanished. The engineer started violently, pivoted, his mouth agape, and stumbled a few paces to his left before he, too, disappeared.

There was a hissing sound, like gas escaping.

"—and the Fourth Spoke pulses, exactly on time, carrying with it one old Arab prince, and one Jewish witch," She smiled. "And one Iranian engineer, who at this very moment is probably standing in the middle of a spooky oasis, ten years or so ago, thinking he must be mad. Certainly everyone else will find him so."

"I don't understand." It was almost a moan.

The strange light flickered all around them now. The woman lowered him carefully to the sand.

"We're in the Tisqat timefield," she said peacefully, "going back."

HE WOULD NEVER, for the life of him, understand the mechanics. He hated mechanics to begin with. So he watched.

He watched the palmettos grow into palms, and the tiny pool widen and fill. He saw people, flickering in and out of his vision, almost subliminal, doing the things that people do, eating, drinking, sleeping, making love. Sometimes they seemed to approach at tremendous speeds, then pass right through, as through a ripple or wave.

So, he thought, it's all true. Ghosts, spirits, spooks... Though not the way he'd ever imagined.

The woman explained, or tried to.

"The way I see it, time's just another dimension of space. No past, no future as we know it; just the present looping around on itself like a snake with its tail in its mouth. Yesterday is somewhere else." She made a face. "And the only way to get from one space to another is to take the elevator."

"The elevator?"

"That's what I call the twelve spokes. I know there are twelve," she confided, "because at the beginning and the end they all meet in the same place, like lines of longitude at the poles. So all we operators can get together."

The Caliph Aleppo shook his head wearily. Maybe he was just too old to understand, or too stupid. The woman's claim that it all made perfect scientific sense fatigued him. Science itself fatigued him, and he told her so.

"Nonsense," she snorted. "The Arabs practically invented science. You're just being hopelessly stubborn."

He was beginning to yawn. "So how come," he asked finally, "this was never known? Forget the Arabs. But how could it have eluded the Americans, if it's scientific fact?"

"The spokes are small, and eight of them are in the ocean. They blink on for less than a second out of one whole day. As for the Americans," she sighed, "it looked too much like magic, for the Americans."

Then it was time to go.

Slowly, on all fours, they crawled towards the perimeter. In a low whisper, the woman briefed him. In a mood of dreamy incomprehension he struggled to get the instructions straight.

He must touch the one who came.

He must touch the one who came, or Allah forgive the consequences, something about doubles, which made him shudder.

When they reached the edge, everything slowed. He could see the night air becoming steady and even, and a solitary fire

burning down to orange embers.

Then the woman was gone.

And then was there again.

He saw an Arab, a tall dark man in flowing robes, approach. He saw the familiar face, which once he'd likened proudly to a wolf's. He felt dizzy. The blood pounded in his head.

A mere five feet away from him, the woman signaled at some point to his left and behind him. It occurred to him then, for the first time, that he was invisible.

Like a ghost.

Panicked, he plunged forward, aiming at the long, white robes.

EPILOG

THE YOUNG MAN WOKE WITH A START. Such strange dreams he'd had, such disturbances. Even awake, the air seemed filled with ghosts.

He heard... something. A shout, a woman's voice.

The woman. But she...

Then he heard it again, and saw a dark shape in the middle distance, beckoning. It can only be the woman, he thought, and his throat went dry.

He moved forward, barefoot. His robes made flapping sounds.

When he was within touching distance of the woman she turned and gestured to some point beyond his shoulder. His hackles rose. Ambush! A kidnapping to sabotage the Conference! But when he turned he saw nothing.

"What—?"

He felt strange. Then his foot went suddenly cold, as if touched by a ghost.

"Are you all right?" the woman demanded intently, in Arabic.

His confusion deepened. He put his hand to his head, as if checking the progress of a fever.

"I feel..." He shook his head violently. In some recess of his mind a series of images flashed with dream-like clarity. Fireclouds. Smoke. The long slow death of the desert. For one horrifying moment he thought that even the skin on his face had dried out, and had to stroke his cheek for reassurance.

The fabled spooks of Tisqat, he thought, shuddering.

"There's a word for it in French," he said finally.

"*Déjà vu*," The woman studied him closely. "You've done all this before. You had a vision of the future..."

"You seem to know a lot," the young man scowled, "for a woman."

"I know a lot, even for a man," she said.

"Your fire's gone," he said, as they walked on back. His hand reached out to stroke her hair, as if it were the most familiar gesture in the world. "I can't let you freeze to death."

"So don't," she said.

Then he built up the fire and made tea; and they talked, et cetera, till dawn.

—G—

The Aleph

Andrew Whyte

The more satire among you may have noticed an occasional mistake. Congratulations! You are among the elite. Those inconsequential flaws were purposefully introduced in order that you might come to know yourselves for what you are. Of course, there is a limit. We don't like to see things getting out of hand. Recently, it has been called to my attention that, due to some as yet not understood process involving the fermentation of the ink after the magazine has gone to press, wholly unintended misrepresentations of facts are being introduced into "The Aleph". You can well imagine my horror to read, for example, in the entry for Paul Anderson's *The Earth Book of Stormgate* (p. 80) that Stormgate is the name of Nicholas VanRijn's house on Javal! What pitiful! Why, anyone with the most rudimentary knowledge of Mr. Anderson's work knows that Stormgate is the name of the Tibetan cloak into which Chris Holm seeks admission. Our apologies to Mr. Anderson and to his readers. Measures are being taken. . . And that perfectly idiotic statement in the annotation for *Diapason* by Thomas Sullivan (p. 87) that the cover was in black-and-white! Really! As if I couldn't tell the difference between a photograph and a proof! Why, it said "This paper manufactured by Kodak" all over the back! No No. This really will not do. Would you believe Greenlins. . . (Oh, the heck with it. Friends. I goofed! And I'll probably do it again. To see it happen. . . (And if you remember the second half of that maxim, then you will know how great is my esteem for you when I beg, humbly, for your forgiveness. . .)

For the sake of brevity and convenience, certain abbreviations have been supplied as a reference code. They will be found on the same line as the author's name, on the right-hand side. Here is a key: (C) Collection (more than one story by the same author); (C+) Story series collected or collected with unifying theme; (F) Fantasy; (J) Juvenile; (O) Omnibus (Collection containing at least one novel). Since of novels make up the majority of books listed, none of these are specified as such. We have recently added new symbols to deal with the increasing amount of illustrated fiction: (G) Graphic Novel; (GS) Graphic Story; and (GC) Graphic Collection—are used to denote books of which approximately equivalent portions are shared between text and artwork. Material taken from publishers' catalogues is given in [brackets]. Material from other sources is in quotation marks.



AKERS, Alan Bart
Captive Scorpion
[Oray Prescott series, #17]
[Valian Cycle: Book III]
DAW/August/\$1.50

(F)

ALDESS, Brian W.
Enemies of the System: A Tale of Homo Uniformis

Harber & Row/July/\$7.95
The transgenic elite of an idealized communist Utopian state, having arrived for a vacation on a primitive planet, meet with an accident and are suddenly exposed to the horrors of unprogrammed existence (and very possibly being eaten alive by the local life forms, which, as it turns out, are all descended from human stock that has either reverted to savagery or lost its humanity altogether and become bestial). There exists the possibility that the whole experience is a test to weed out malcontents and deviationists. And yet. . . This is a satirical political fable that was published in its entirety in the June issue of the *Magazine of Fantasy and Science Fiction*. Aldess, as usual, has avoided repeating himself.

ALEXANDER, David
The Chocolate Spy
Coward, McCann & George/Henry/August/\$8.95

ANTHONY, Peter
Kirlian Quest
[Cawser trilogy: Volume III]
Ace/July/\$1.75

Long after the Wars of Energy, both the Milky Way and Andromeda galaxies are threatened by a mysterious enemy from outside the Cluster, known only as the Amoeba. . . To the rescue comes Herald the Healer, a descendant of Flint of Outward and Melody of Mistake, the hero and heroine of the first two novels in this cozy trilogy. Like them, he is possessed of a phenomenal Kirlian aura, which will prove quite indispensable in unlocking the secrets of Ancient technology before the arrival of the enemy fleet—a million battleships in number—thereby redearning the honor of Sphere Slash. It's hard to believe Anthony expects any of this to be taken seriously, but diverting it certainly is—if you're in the mood for it, and the series is selling even better than expected.



BENFORD, Gregory
The Stars in Shroud
Galaxy/May/July
Berkley-Pinnacle/August/\$8.95
Revision of *Deeper Than the Darkness*

Long after the Rat Wars that destroyed the white race, an interstellar human empire is at war with little-known aliens, the Quare. Ling Sanjen loses the command of his ship when he questions a decision to return to Earth with the survivors of an enemy raid, victims of a strange psychosomachon induced by the Quare, the symptoms of which are "fear of light, heat, heights, open spaces." Ling, an outcast because of his American ancestry, senses that the Quare, who are thought to be "hermits", have correctly assessed the weaknesses of the tradition-bound, centralist human society and have devised a weapon that takes advantage of them. Ever striving to perfect his craft, Benford has reworked this study of interdependence vs. individual initiative from a first novel he thought slighted, at the request of Berkley editor David Harwell.

BENSEN, Donald R.
And Having Writ . . .
Bobbie Merrill/July/\$6.95

Up to now, Don Bensen's not inconsiderable contributions to the field have been as an editor (variously in charge, over the years, of, among others, the *Ullin* at Pyramid, *Berkley*, *Beagle*, and currently *Dell* and *Delacorte* (the *Question* series). His first novel examines "the humorous consequences that might have resulted if spacemen had landed on Earth in 1928 and tried to mock about with our culture." A four-man Explorer Team about to burn up in the atmosphere of a primitive planet narrowly averts disaster by deploying "the ultimate security weapon, the reality displacer," which shifts them into a parallel universe. When their ship sinks on entry, they realize that their only way home lies in attempting somehow to stimulate the technology of the local barbarians (in contravention of all professional ethics) to the point where they will be capable of effectuating the necessary repairs. One likely strategy is "to bring about the obviously forthcoming World War as quickly as possible." Having initially represented themselves as emissaries of a fictitious Galactic Empire to Teddy Roosevelt, they find themselves at a disadvantage when they are obliged to confess the truth to him and Thomas A. Edison, and, as a

result of their presence on Earth, the latter is elected President instead and places them under house arrest. Aided to escape by TR and H.G. Wells (who is serving as a kind of unofficial cultural ambassador), the team head for Europe where they attempt to persuade King Edward VII, Kaiser Wilhelm, and Czar Nicholas of the desirability of imminent global conflict. Perversely, however, this counsel seems to have an opposite effect and two years after their arrival... I fear I have been a trifle clumsy in conveying the gist of this and gone on much too long. Anyway, the fun of it is partly in seeing this *Argentine* cast of characters subject to so many ironic reversals of "reality" (Kasputin, reporting on US reification "the installation of one Vladimir Ulyanov as Minister-President of the Russian Democratic Empire," etc.). Benveniste even obtained permission from P.G. Wodehouse before his death to use him as a minor character... While we were not fortunate enough to experience the effects of their meddling, our four friends did nonetheless make a considerable impact on this best-of-all-possible-worlds. I believe it is known as the Turgenev Mesorize.

BOVA, Ben *Colony*

[Sequel to *Milfonium*]
Pocket Books/July/\$1.95

Author's original title: "Island One"

This is the first novel published about the type of space habitat proposed by Gerard K. O'Neill and others. It was the brainchild of Pocket Books publisher Peter Mayer, who conceived of the book as a total package: 120,000 words to sell at \$1.95, as a lead title of general interest, not as if. When he approached *Analog* editor Ben Bova with the proposition about a year ago, Ben thought he saw a way of pulling the idea together as a novel by setting it in the same background universe as his novel, *Milfonium*, which dealt chiefly with the political effects on a troubled Earth of a US/Soviet base on the lunar surface (and vice versa). *Colony* begins eight years after the earlier novel. The true world government envisioned by UN Secretary-General DePaolo is now a reality, but life on Earth is far from tranquil. The planet is vastly overpopulated, polluted, torn everywhere by strife, ravaged by a new kind of ecological warfare. People are starving in countless numbers. New York is in flames. In total contrast to the scenes of chaos below, Island One, the environmentally perfect colony built by a multi-national consortium, serenely orbits the world in an L₄ orbit ("More artistically pleasing," says Ben. "You get a better view of the moon"—but there are sound commercial reasons as well). "The five richest men in the world have decided to build an Eden," and David Adams is one of its citizens. A "test-tube baby," genetically perfect, he yearns to see with his own eyes the brilliance of all men. His trip to Earth and the awareness he gains of the sorrows of the seven billion before set the stage for a final struggle for power and a human drama of epic dimensions. In spite of the violence, the book is basically optimistic and expresses the philosophy that "you can't go on slicing up the pie into smaller and smaller slices. The only way to resolve our problems is to go into space." Unquestionably, *Colony* is Ben Bova's most important work to date, and has a potential to reach a wide audience who could conceivably profit from a consideration of the issues examined, in lost some background color and detail, as well as several sub-plots, when the author was obliged to spend a tedious weekend cutting back the eight hundred pages of the final draft to conform with the procrustean limitation of the original bid specification.

Drew Whyte

BRADLEY, Marion Zimmer

The Ruins of Isis Illustrations by Kelly Freas Starblaze/August/\$4.95

An anthropologist/sociologist team who are also man and wife come to the non-Confederate world of Isis to examine the mysterious ruins which the husband thinks contain clues to the origin of the universe. Isis is ruled by an overbearing matriarchy which consider men to be lesser beings. The couple are obliged to reverse roles in order to gain entrance to the ruins, which the husbands had sacred as the abode of superior bodiless beings with whom they are in telepathic communication. The team's visit coincides with a long-festering revolt of the male population, who look to the husband for leadership. This combination of factors tends to put the marriage severely to the test. What is apparently of chief interest here is the dynamics of the matriarchal society... Now that the *Starblaze* books have at last made their appearance, I have an occasion to add to my somewhat caustic remarks of the previous issue (see BOND) that they are handsome, indeed—printed on a high grade of paper (in colored ink) and bound in Kover, a durable and attractive textured material that should help to give these volumes a long shelf-life. I believe, in addition, that there is an arrangement which makes it possible to buy the entire series at a discount as it is published—in effect, a subscription.

BRENNERT, Alan City of Masques Playboy/May/\$1.75

CARTER, Len Renegade of Callisto [Jandar series, #5] Dell/August/\$1.50

Yet more adventures in the manner of Edgar Rice Burroughs... Far from his adopted homeland and the Golden City, Prince Jandar's stalwart sidekick Kopa and the Prince's little ward Yasar wander onto the savage lands of the insectoid brotherhood that Kopa had renounced. [Lost in the treacherous scarlet plains], the two become separated until all destinies collide at the Great Yathoon Games in the Hidden Valley of Sargol—the impenetrable citadel girdled by a seething moat of flame.]

CHALKER, Jack L. Dancers in the Afterglow Ballantine/delRey/August/\$1.75

Jack Chalker's second novel of the year concerns an invasion of an unsuspecting pleasure planet by a merciless alien race. Inhuman, unthinking, unfeeling—the Machists had gobbled up world after world, spreading their culture to thousands of different races with a brutal, vicious, but most effective system. They converted whole populations into something not quite human. [In marked contrast to his other novels, there is no humor in this one. "It's stark, nasty, very bitter and downright," the author says, and adds, "Although, in pure [Eric Frank] Russell fashion, sweet good guys win, they don't win in the way you expect and they don't necessarily win what they think they want." It seems Jack has been reading some of the same books the new Marxist rulers of Cambodia did, before they turned theory into chilling reality. *Dancers* was, in fact, in his mind "not a Judy-Lynn book at all" and he was surprised when he bought it. The first of several sequels to *Midnight At the Well of Souls* will follow in September.

CHANDLER, A. Bertram

The Rim Gods & The Dark Dimensions [Grimes. Book III] Ace/August/\$1.95

CHARNAS, Suzi McKee

Motherlines [Sequel to *Walk to the End of the World*, Part II of a trilogy] Berkley/Putnam/July/\$8.95

In a brutal future world after *The Wasting*, in which men have sunk into a new barbarism and women are held responsible for all the ills of the past, a few strong individuals survive who will one day establish a new society.

CHERRYH, C.J. The Faded Sun: Kesrith [1st volume in a trilogy] DAW/August/\$1.95 First mass-market book publication (previous SF Book Club edition and magazine serialization.)

CONNER, Michael

I Am Not the Other Houdini Harper & Row/July/\$8.95

The Houdini of a hundred years hence is a master illusionist named Alphonse Sterling who fancies himself the reincarnation of the earlier model, with whom he is obsessed. On July 4, his greatest (and perhaps final) death-defying act, the Passage Through Molten Silver, will be performed in Earth orbit and transmitted live over a "nationwide broadcast." It is the latter aspect that intrigues psychologist Bruce Nakhalski. It provides him with a much-needed opportunity to effeminate a sophisticated subliminal brainwashing program that will hopefully serve to unite the Western Region and the Eastern Confederation, separate countries in the aftermath of the civil war and depopulation that followed the ultimately suicidal Chinese campaign of 2032. But Nakhalski is ill at ease; he suspects that "Houdini" may have other tricks up his sleeve. Too much is at stake to risk the dangers of surprise. In order to learn the truth, Nakhalski contacts Ryan Arkad, a gifted psychokinetic and former student over whom the psychologist has maintained control, through implantation of false memories. Arkad, whose fear of his own powers has blighted his life, is a drunken hermit who has no desire to become involved, but Nakhalski leaves him no choice to refuse. The interaction of these three characters (with Kam, Sterling's wife, a figure of equal importance) takes up the virtual whole of this intriguing first novel, whose background details are less convincing. *Houdini* seems to be a multiple reflection on the manipulation of illusion as a means of acquiring and retaining power. It marks Conner as a writer to be watched. Carefully.

COPP, DeWitt S. A Different Kind of Rain Norton/June/\$8.95

DANIELS, Max The Space Guardian Pocket Books/August/\$1.75

To the Guardians, "Utopia was the enemy." Lohk Moss had spent "years of training in physical violence, sedition and treachery, every method of twisting fact to one's purpose in the procedures of bribery, corruption, blackmail, extortion, and mental torture" in order to qualify for membership in an organization that, "Indis-

ferent alike to genocide and humanitarianism, was concerned only with the study of intelligence and the prevention of mass. "Now she was taking a leave of absence to find her missing father, also a Guardian, whose the resources of the Institute had been unable to locate. In addition to her Guardian training, Lahia had the formidable talents of her mother's race, the Changelings. "This heritage had made it possible for her to grow wings or turn into a mist. It did not, unfortunately, provide flying lessons or indicate what to do when the molecules of mist that had been Lahia were dissipated all over the area by hurricane winds." In order fully to possess her birthright, she sought out the mysterious Anantarians, whose properties were said to include a 'symbiotic psychic relationship' that conferred strange powers upon its owner. These could be found on Wamener, an inhospitable planet that was mostly sand and high winds, so that, surreptitiously, went Lahia. Once there, she secured the services of one Wesel Soat, a 'wandering Jew,' who, while seemingly overcome by the disadvantages of immortality, was to prove a more than valuable associate in the course of the unpredictable perils that lay ahead. "Mas Danicel" is a pseudonym for Roberta Gellis, who is well-known (to they who know) as a writer of historical gothics. This intelligence did not presuppose my enjoyment of this novel, but an intrepid foray into the galaxies soon convinced me that 'Mas' was indeed a mistress of the conventions of the sci genre and further pursuit, of her powers to enhance the familiar by means of inventive and colorful detail, not unmoved by occasional wit. If others feel as I, the implicit sequel will no doubt be forthcoming. (Afterthought: While Harlan storms the main gates of the citadel with a full frontal assault, the back door to the Mainstream has been opened wide and, one by one, scoots from both sides are pushing back and forth undetected.)

DAVIDSON, Avram (C)
The Redward Edward Papers
 Introduction by Randall Garrett
 Foreword by Michael Kurland
 Doubleday/July/\$7.95

In recent years, Avram Davidson seems to have fallen on hard times. A gifted writer, he has enough endowment, ingenuity and mastery of language to supply a hundred others. Perhaps this is more than a figure of speech. It might help to explain the amazing influx of "new talent" and why we never see the second volumes of those ambitious series he began so promisingly. Perhaps one day this frustrating situation may change. For the moment, let us welcome this new collection. Five of the stories have been previously published ("The Lord of Crenel Park," "Dagon," "The Graffiti Fighting," "Sachverell," and the memorably titled "Singular Events Which Occurred In The Hovel In The Alley Off Eye Street"). The balance of the book is a series of interrelated episodes in the career of a writer/magician nearly as improbable as Avram Davidson.

deCAMP, L. Sprague (F/Vesit)
Heroes and Highbrow
 Illustrated by Tim Kirk
 Heritage Press/June/\$15.00

Tales from Gavan's Bar
 Cover & frontispiece: Tim Kirk
 Interior illustrations: Inga Stevens Pratt
 Outiswick Press/June/\$13.00
 Postponed from 1977. See Gullies Number 4.

DeBELL, Ann
Pursuit of the Screamer
 DAW/July/\$1.95

82 GALILEO

[The forbidden land of the ruined Tek robot-world dominated the plateau. Below, among the human strongholds, all contact was forbidden, however, and when the screaming of a newborn Tek was heard, the Law said, "Seek out and destroy!"] When Janus and the warrior girl Gull added such a screamer, they were forced to flee, with the whole world in pursuit. And the Screamer? What was he? A small boy? A monstrous tiger? An alien robot? mind run from a forgotten mechanical master computer? Or the last king of Iron Kantroum? DAW's lead novel for July introduces a parody-mystery new author presented as a worthy successor to such discoveries as C.J. Cherryh, Tarith Lee, and M.A. Foster. "Dibbel" teaches creative writing at a midwest college and, among other accomplishments, edited the privately printed memoirs of the widow of the first governor of the Philippines. He is currently at work on a sequel.

DICK, Philip K. (C)
A Handful of Darkness
 Introduction by Richard A. Lupoff
 Gregg Press/\$11.00
 Facsimile of Dick's first collection, published before only in UK (1953)?

DICKSON, Gordon R. (GS)
Home from the Shore
 Illustrated by James Odbert
 Afterword by Sandra Miesel
 Sundrift Press (Grosset & Dunlap)/June/\$4.95

"Home from the Shore" is not merely entirely new in publishing but in artistic concept. It has been, in the trust of series, a collaboration between the artist and the author. What has emerged is not merely an illustrated story, not even a story with special illustrations carefully fitted to it. The two parts of the whole—art and story, art and fiction—are equal co-partners. The result is something more than a book. It is a mechanism for the imagination, a magic box that the reader can open and experience, putting himself or herself much more deeply into the life of the story than would otherwise be possible. "Hypertelebot, you say? Puffery, puffery, said sir, what? Somehow, this time, I don't think so. Of course, the magic may not work for everybody—there is always a question of personal taste and receptivity to style—but the fact that a vision was shared so intensely by author and artist (and I have talked to them both) and so intelligently carried out (and I have seen what was produced) leads me most eagerly to anticipate the final version of that product (which I have not seen but which all of us will be able to see and evaluate for ourselves momentarily). Such a sharing of vision is rare, in any field of endeavor. Recently there has been such a dearth of artistic imagination in commercial art as to make one believe that was somehow considered a marketing liability. Indeed I have heard several who work in the publishing trade confess as much, as if their discovery of the trend and subsequent decision to comply with it were something to be commended or at the very least, not begrudged, since it was necessary to survive, to compete.) Now something seems to be happening which could change all that. How the public receives *Home from the Shore* and the other books which have been put together with equal care (if such a fact exists) will determine whether or not such a concept is viable, whether or not—as is believed by a few—there is a real hunger, perhaps unconscious, for something like this. We'll see.

DRUILLIET, Philippe (GS)
Yrngaal and Urn
 Dragon's Dream/June/\$8.95 (paper) In full color.

If you haven't already seen Drulliet's work in *Heavy Metal* or encountered the Lane Sloan book just published [see Gullies No. 7], you may want to look into this. There is a good possibility that he is some sort of genius. You will either find his crowded, sometimes panel-less pages, with their combination of cyclopean scale and infinitesimal detail a unique and fascinating experience and want more of this man's work or he will leave you quite, quite cold. Admittedly, he is obsessed, hallucinated. If you like Lovecraft, the painter John Martin or have other weird tastes and haven't read up your mind already... Some say that the text by Michel Denault is rather too much, and that text and illustrations do not match, that both of these stories are a huge, pretentious failure, but then, they like Drulliet's other work, rather more than words can say.

ELLISON, Harlan (CHF)
Strange Wine: Fifteen New Stories from the Nightside of the World
 Harper & Row/July/\$9.95

Although ten out of fifteen of these stories appeared in publications oriented towards the sci community, the author wishes this book to attract attention elsewhere. He regards himself as a 'fantasist' in a distinguished tradition that includes Edgar Allan Poe, Franz Kafka... and dislikes the label sufficiently enough to have withdrawn *Strange Wine* from the SF Book Club. It is foolish to speak for Harlan when he expresses himself so well, as doubtless in the introductions to the stories in this book, which are printed on grey paper, an added refinement. There is a four-color photograph on the back—another superb jacket by the Dillons. It is perhaps wise to remember Hans Christian Andersen's fable, "The Emperor and the Nightgown". The caged bird does not sing.

FISHER, Leonard Everett (J)
Noonan
 Introduction by the author
 Doubleday/June/\$5.95
 For ages 10-12

Subtitled, "A Novel About Baseball, ESP, and Time Warps," this humorous of sports fantasy tells of how a fifteen-year-old sparc pitcher for the Brooklyn Dutchmen gets hit on the head by a foul ball and is transported from the year 1896 to the year 1996, a time in which the national pastime—and the world—have undergone dramatic changes. Johnny plays as his own grandson and makes a great impression with his psychokinetic curve ball ("Time is the umpire's call...").

FOREST, Jean-Claude (GN)
Barbarella: The Moon Child
 Heavy Metal Books (Two Continents)/August/\$6.95 (paper)

GALLUN, Raymond Z. (C)
The Best of Raymond Z. Gallun
 Edited by John J. Pierce
 Ballantine-delRey/August/\$1.95

GERROLD, David
Deathbeast
 Popular Library/July/\$1.75

HARRISON, Harry (O)
The Adventures of the Stainless Steel Rat
 Berkley/August/\$2.25

Continues: *The Stainless Steel Rat, The Stainless Steel Rat's Revenge, The Stainless Steel Rat Saves the World.*

The Aleph

HERBERT, Frank

The Illustrated Dune

Illustrations by John Schoenherr
Berkley/Windhover/August/87 95

HOGAN, James P.

The Gentle Giants of Ganymede

[Sequel to *Where the Stars*]
Ballantine-deRex/July/51.75

The publication last year of *Jahiri's the Stars* was more than the debut of another promising author. It was proof that one of the most special joys and surely unique traditions in science fiction was still alive. "The thing that a lot of people seemed to like about it was that it was science presented as a detective story," says the author, whose new book is his third novel already. Science as entertainment in itself, rather than the causative factor in a story very little otherwise concerned with the workings of the universe in all too rare in of these days. The sequence of these two books (*Stars* & *Gentle Giants*) spans twenty-five million years and defies capsule summation. Suffice it to say, that should any of this be true, there is much about the origins of mankind you did not know. It all has to do with a mysterious corpse found on the moon, a normal-seeming man who happened to have died 50,000 years ago, a lost tenth planet and why it isn't there any more, a great deal of very sophisticated equipment and techniques in the hands of fearfully intuitive maverick geniuses. Hogan clearly enjoys audacious speculation based on sound science and is able both to convey his enthusiasm and convince me that anything is possible, which I'm not altogether sure he doesn't believe himself. For those who did read *Jahiri's the Stars*, it would perhaps be kind to add that this book was written to satisfy your inevitable curiosity about just what happened to those giants. (He intends to tell the story of Korin, too, but, later. Next in line is a novel now called "Microplanet Janus.")

IPCAR, Dabrov

(F)

A Dark Horn Blowing

Viking/June/58 95

KAYE, Marvin

and GODWIN, Parke

The Masters of Solitude

Galileo Nas, 6-9

Doubleday/July/\$10.00

SF Book Club/November/\$3.50+

Formerly titled "The Feast of Lazarus" and "The Gentle of Solitude"

LAUMER, Keith

The Ultimate Man

St. Martin's Press/July/58.95

Serial version published in *Asylum* as "The Wonderful Secret" (September-October, 1977)

Retief At Large

Ace/August/51.95

(C+)

LORD, Jeffrey

(F)

Wizard of Rentoro

[Richard Blade Series, No. 28]

Pinnacle/August/\$1.50

LOVIN, Roger

Apostle

Illustrations by Kelly Freas

Starblaze/July/\$4.95

Roger Lovin has been an editor at *Broadside* (a humor magazine) and Now Library Press, has had a column in *The Los Angeles Times*. Is the author of

Drew Whyte

Complete Motorcycle Manual and The Presence (published by Fawcett as by "Rodgers Clement")

Apostle is a considerable expansion of a short-story cycle that appeared in a Roger Elwood anthology (*Flame Tree Planet*, Concordia Press, 1973) for which he also wrote the introduction. The story has to do with an alien invasion of Earth turned back by the lone survivor, an old man who converts the invaders to Christianity.

LUMLEY, Brian

Spawn of the Winds

Jove-HB/July/51.75

[Cibulhu Mythos?]

LYNN, Elizabeth A.

A Different Light

Berkley/August/\$1.75

MARTIN, John

Revolt on Jupiter

Minotaur/July/51.50

MEYERS, Richard S.

Doom Star

Carlyle/May/51.95

MILLS, Robert E.

Star Fighters

[Sequel to *Star Quest*]

Belmont Tower/July/51.75

MOORCOCK, Michael

(F)

The Chronicles of Coram

Berkley/August/\$1.95

But one-volume publication.

Contents: *The Bull and the Spear*, *The Oak and the*

Ram, *The Sword and the Staff*

MORRESSEY, John

The Drought on Xiaz II

[Sequel to *The Harmons of Xiaz II*]

Illustrations by Stanley Skardalski

Walker/June/55 95

For ages 7-11

NORDEN, Eric

(C)

Star Songs and Unicorns

Minotaur/August/51.95

PAUL, Barbara

An Exercise for Madmen

Berkley/July/51.50

POHL, Fredrick

Gem: The Making of a Utopia

Galaxy/August-October

St. Martin's Press/1979

POURNELLE, J.E.

Exiles to Glory

[Hansen Enterprises series]

Galaxy/September-November, 1977

Ace/July/51.75

ROBERTS, Peter

The Corohite Mines

Minotaur/July/51.50

ROBESON, Kenneth

The Purple Dragon

[Dix Savage series, No. 91]

Bantam/July/51.25

Originally published in *Dix Savage Magazine*

(September, 1940). It is a collaboration between Lester Dent and Harold A. Davis, described by Philip Jose Farmer as "one of the best of the supergads, still enjoyable..." The plot is one of the more scientific, having to do with Doc's Crime College, where criminals were rehabilitated. The friend of the title used a mind-control device to (try to) wreck Doc's good works. (Thanks to Will Murray.)

ROTHMAN, Tony

The World Is Round

Ballantine-deRex/July/51.95

[Their world was fifty times bigger than any world had a right to be. Their days were a year long. They had no moon. Normal seasons didn't exist, and when the natives weren't worried about being roasted alive, they lived in dread of freezing to death. Paddelack was not a native of Patra-Bank, but he had been trapped there long enough to hate its instantly with every fiber of his being....] This is, I believe, the first time that the leader for the month has been by a totally unknown author. *The World Is Round* is described by its editor as "a real science-fiction novel, from the people who brought you James Hogan" (and are proud of the fact). Tony Rothman is the son of Golden-Age-Campbell-Astounding writer Milton Rothman (who wrote "Heavy Planet," among others, under the name Lee Greger). He is currently working towards a doctorate in General Relativity in Texas and had an article in *Isaac Asimov's SFM*, "Marvelous world! Marvelous alien!" exclaims Judy-Lynn and Robert Silverberg is quoted as saying, "A memorable debut..."

SHAW, Bob

Who Goes Here?

Ace/August/51.75

1st publication in UK (1977) by Gollancz

SHERRELL, Carl

(F)

Arcane

Jove/HBJ/August/51.95

This second novel by the author of the Howardsque *Rawe* gives further evidence of the popularity of the figures of the tarot as motifs in both science fiction and fantasy (see, in this issue, *Conscious, the Chorus!* by Alan Yates, and *Piers Anthony's Korian Quest*, although in the latter, they have become been considerably transmogrified). [All the cards in the deck (The Lovers, The Devil, The Hanged Man, The Magician, etc.) are chapters in the legend of Arcane. "A cloud of yellow dust shrouded the valley, enclosing the primitive, cave-dwelling tribe who lived there, out of which emerged a man they called 'The Fool'—a man who would become their emperor, in a bag of nook black leather were the secrets of the world, secrets that could be used for healing or for holocaust.]

SILAS, A.E.

The Panorama Egg

DAW/August/51.75

Popular amusements in the days of Queen Victoria were those eggs with prophetic windows through which one glimpsed a view of some exotic panorama. Anchor was a collector of the curious, an ordinary man who secretly yearned to escape the routine of modern life. As unexpected opportunity came with the acquisition of a new addition to his collection. This particular egg was not merely a window on a strange scene, but a gateway to another dimension, through which Anchor was able to pass with the aid of the enigmatic grey woman known in this world as Miss Merakias

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in a place not unlike Middle Earth [where alternate science required and a mission of heroism was the price of existence.] Yet another new talent, Silas has studied journalism at the University of Oklahoma. The author's sex is unknown to me (and none of my damn business).

The Best of Robert Silverberg: Vol. II

Introduction by Thomas D. Clareson
Gregg Press/\$15.00
New
Special set price: \$25.00

SIMMONS, Geoffrey

The Adam Experiment

Arbor House/July/\$8.95
Previously announced for publication as "A Stellar Affair."

[The time is 1999 and scientists are probing the possibilities of human procreation in space aboard an orbiting Sky Lab. When alien forces attack and hold the station hostage—with its pregnant scientist mother aboard—a chilling message is delivered to a terrified Earth: "No human child shall be born in the cosmos." A panicked planet watches as the woman—mother, scientist, lover, and human being—grapples with the aliens and the very nature of life, death, and human love.] Simmons is the author of *The Z Papers*, a novel of political suspense.

SIROTA, Mike

(F)

The Dark Straits of Reglathium

[Dannas series, No. 4]
Mantor/July/\$2.25

The Slaves of Reglathium

[Dannas series, No. 5]
Mantor/August/\$2.25

SMITH, David C.

(F)

Oron

Zebera/July/\$4.95

SMITH, George H.

The Island Snatchers

[Jed in a series]
DAW/July/\$1.50

TUBB, E.C.

Incident on Ath

[Dannas of Terra series, No. 18]
DAW/July/\$1.50

VARLEY, John

The Persistence of Vision

Introduction by Algis Budrys
Dial (James Wadell)/July/\$9.95
A Quantum Science Fiction Collection

Collections apparently don't sell as well as novels but they are essential. This one will probably be regarded as a major publishing event. Varley's career has progressed in four years to the point where not to read him would be impossible if you seek to know What's Going On in sf at the moment. His flawed but fascinating first novel, *The Optic Nerve*, attracted praise, was widely read, and further increased his reputation but it was the stories that came before (and which it tried a little too conscientiously to explain) which made it the Quantum flagship. This is a showcase of some of the best, half of which have the same "Eight Worlds" background as the novel ("The Phantom of Kansas," "The Black Hole Passes," "Gotta Sing, Gotta Dance," "Overdrawn at the Memory Bank," and probably, "Retrograde Summer"). These unforgettable snapshots of future realities stifle and convince.

WAGNER, Karl Edward

(C +) (F)

Night Winds

[Kane series]
Warner/August/\$1.95

WATSON, Ian

Alien Embassy

Acc/July/\$1.75
1st publication in UK (1977) by Gollancz

The fiction of Ian Watson (especially the novels) is well worth investigating for those who turn to science fiction for mature, literate, imaginative reading. Watson does not insult the intelligence, he stimulates it with intriguing speculations, audaciously juxtaposed. A great deal is always going on of apparent great significance. The author seems to know where he speaks and makes the reader want to learn more of many subjects as well as the fates of his characters, which, if appalling or occasionally grotesque, also frequently communicate the terrible exaltation of apocalyptic. There are splendid set pieces in every novel—the mass suicide of the whales in *The Jonah Kit*, the flight of Julie and the remainder in *The Marnas Inc* or the birth of the Xenoth "mutant messiah" in the heart of the flooded jungle, that terminates *The Embedding*. *Alien Embassy* has to do with "psychic astronauts."

WETANSON, Bart

and HOEBLER, Thomas

The Hunters

Doubleday/August/\$7.95

A recent newspaper story about mass disappearances in Utah (?) inspired this first novel by an unfamiliar collaborative pair. Two strangers, a man and a woman, appear in a small western town and post notices announcing their arrival and that they have the power to show mankind the way to the stars. Later they give a demonstration that impresses quite a number of people sufficiently enough that they are willing to abandon their worldly possessions and loved ones for the chance to live on a better world elsewhere. Led by the strangers, a party of would-be emigrants sets out for a deserted area where, sure enough, they find a spaceship waiting for them. But instead of lifting off, the ship disgorges alien tourists who came to Earth on safari and plan to return home with a lot of trophies.]

WILSON, Steve

The Lost Traveler

St. Martin's Press/July/\$7.95
Acc/October/\$1.75
Postponed from November, 1977, see *Galileo* No. 5.
First published in UK (1976) by Macmillan

WOLVERTON, Basil

(GC)

Space Hawk

Introduction by Ron Goulart
Archival Press/July/\$2.95 (paper)

WOODLEY* Richard (adapter)

Killer Spores

[Man from Atlantis series, No. 3]
Dell/June/\$1.50
Postponed from January.

Ark of Doom

[Man from Atlantis series, No. 4]
Dell/June/\$1.50
Postponed from February, when it was announced as "The Disappearances"

WRIGHTSON, Bern

(GC)

Back For More

Introduction by Eric Kimball
Archival Press/July/\$3.95 (paper)

YATES, Alan

Coriolanus, The Chariot!

Acc/July/\$1.75
Yates is an Englishman who has written detective fiction. On the world of Thebes, Shakespeare is the Prophet (in Anderson's *A Midsummer Toss*), he was the Historian. The actors in this planet-wide acting academy can workshop really believe they are the characters they play. Somehow the roles of the Bard have become identified with figures in the past.

Anthologies

CARR, Terry (editor)

The Best Science Fiction of the Year: #7

Holt, Rinehart & Winston/July/\$9.95
Ballantine delRey/July/\$1.95

CARR, Terry (editor)

Year's Finest Fantasy

Berkeley/Putnam/July/\$9.95
Berkeley/July/\$1.95

DOZDIS, Gardner (editor)

Best Science Fiction Stories of the Year: Seventh Annual Collection

COLLECTION
Dutton/July/\$8.95

FRENKEL, James (editor)

Binary Stars #1

Illustrations by Freff
Dell/August/\$1.75
Contents: "Destiny Times Three" by Fritz Leiber and "Robbing the Tooth" by Norman Spinrad

GREENBERG, Martin Harry

OLANDER, Joseph D.

WARRICK, Patricia (editors)

Science Fiction:

Contemporary Mythology

(The SFWA—SFRA Anthology)
Introduction by Frederick Pohl and Thomas D. Clareson
Harper & Row/July/\$14.95
College department to do trade edition in the fall

KIDD, Virginia (editor)

Millennial Women:

Tales for Tomorrow
Delacorte/July/\$8.95

LAURANCE, Alice (editor)

Cassandra Rising

Doubleday/August/\$7.95

PAGE, Gerald W. (editor)

The Year's Best Horror Stories:

Series VI
DAW/July/\$1.75

SCITCHERS, George (editor)

Dark Stars and Dragons:

Asimov's Choice
Dale/August/\$1.75

—G—

Reviews

Floyd Kemske

DEATH IN FLORENCE

George Alec Effinger



OCTAVIA E. BUTLER



GODSFIRE



SURVIVOR

by Octavia E. Butler
Doubleday, \$6.95

Reviewed by Geraldine Morse

IF YOU enjoyed *Mandingo*, that titillating tear-jerker about the lust of a white plantation mistress for her black slave, you'll probably enjoy *Survivor*, which raises the tension at least theoretically by introducing a pleasant bestiality in the male partner, who would closely resemble a six foot tall blue gorilla if such a thing existed.

Survivor isn't a bad book, and the play of miscegenation perks up an otherwise uneventful story, but with apologies to the gorilla, there's no real meat in it.

The bones of this plot would hardly excite the average sf paleontologist. Alanna Varrick, the semi-civilized adopted ward of missionaries, leaves earth with them for an alien planet where they stumble into the center of a fracas between two local groups of Tehkohn and Garkohn, furry people of various colors and sizes. Alanna falls captive to marauding Tehkohn, survives, and indeed flourishes among these rough hunters and fighters, making a place for herself that she had been unable to make among her own people. Eventually she mates with the head Tehkohn, bears a small, blue-furred child, and is the instrument for freeing the enslaved missionaries. Their horror of her Tehkohn relationship sets them apart, however, and finally she is isolated from them to remain with the

alien tribe.

The plot line may well be classic—it is at least common—and the author has studied enough ethnology and anthropology to lull the lenient reader, although her ignorance of biology will lose the attentive one. In fact, in sexuality and their continual intratribal posturing for rank, the aliens resemble Jane Goodall's chimpanzees; however, they are also hunters and gatherers, and have a separate artisan class responsible for what we would consider to be the more civilized efforts of the tribes. Animal-like, they express many emotions and attitudes physically rather than verbally, by changing their bodily hue at will:

"...in the Kohn way, he allowed his coloring to fade to the rare gray of grief and mourning."

"He flashed white on that. It amused him."

"I flared an angry yellow."

The alien characterizations are interesting, but since the crux of the plot involves the fertility of the alien/earth inter-specie matings, some explanation is expected; none is offered. Perhaps, on the other hand, this point is best passed over by the author and taken on faith by the again-lenient reader. To do so, however, is to dishonor the efforts of such writers as Ursula K. LeGuin and Larry Niven, who hypothesize along fairly rigid scientific lines without sacrificing entertainment.

Overall, *Survivor* is reminiscent of a gothic novel set a few hundred years too late. There is the obligatory rape scene, the obligatory misunderstandings between the hero-gorilla and heroine-girl,

and the obligatory separation of the heroine from her people. The main fault of this well-paced work, aside from its semi-science, is a lack of depth in characterization such as is often found in the historical romance. The writing is certainly competent, but the hero and heroine (to revert once more to Africa) bring to mind no one so much as Tarzan and Jane—and having been brought so to mind, they are allowed to fade away without impressing. The book has been thrown together for the sake of an idea—"Wouldn't it be interesting if an earthwoman could bear near-human offspring by a large furry alien"—but the idea has been insufficiently grounded in scientific suggestion and character study.

As a book, *Survivor* will no doubt survive, but the reviewer might wish that it could have done something more, that it could have overcome its sf/Gothic/Romance heritage with fewer of the weaknesses of this inbreeding.

GODSFIRE

by Cynthia Felice
Pocket Books, \$1.75

Reviewed by David Johns

CYNTHIA FELICE'S first novel is about a planet where the dominant intelligent race is feline and humans are slaves. This fact may be enough to reduce the critical faculties of kitty freaks to the consistency of chocolate fudge. For a certain portion of fandom such books as Andre Norton's *Breed to Conquer* and

Fritz Leiber's *Green Millenium* are primarily paeans to the best animal in the world (naturally, Clifford Simak's *City* is anathema), but even though Ms. Felice is quite good at creating a race that is both intelligent and feline in behavior and the cover by Boris is gorgeous, the book is really about more than just cats.

It centers on the life of a feminine feline, Heao, a member of an intelligent elite that produces most of the inventions that her people use. Naturally such a group is a producer of social and religious disturbance, Heao most of all. For she has the most heretical ideas and visions of anyone in her group and the friendship—almost love—of the highest military powers in her people.

Heao's world is a rainy, windswept place where it is almost always dark. The time of greatest light is referred to as twilight, and it's exactly that. The Godfire, producer of hardly enough light to allow the mosses and liverworts sustenance, is a subject of visions—mysterious, frightening, and doom-laden for Heao and her friends and enemies. It is the basis of her society's religion.

In the first half of the book Heao meets the people with whom she will be involved: The King-conqueror, his high priestess Tarana, Baltasar, the merchant, and Teon, the human slave. Felice's gift for making her gloomy setting real to the reader will entice you into the book, but what gives it a backbone for the first half is her romance with Baltasar.

In the second half, which is set some twenty years later, things begin to go wrong. Heao's enemies attack in overwhelming ferocity with murder, banishment, and betrayal, finally forcing her into a Galileo-like recanting of her heretical belief that the human slaves are intelligent. Having recanted, she is allowed to lead an expedition in search of a solution to the mystery of Godfire.

The problem with the second half of the book is that it is so crammed with action, with questions and answers about Heao's world, that the story becomes as knotted as a plate of cold spaghetti, while the reader tries frantically to keep track of each noodle and where it leads. Ms. Felice's effort is worthy, the questions are important for the story, but there are so many of them that they lose all order of importance. The reader wonders what is most important: the mystery of the human slaves, the mystery of Godfire, Heao's

relationships with the various characters, or half a dozen other things.

First novels are traditionally promising. Ms. Felice's is really most encouraging. She is inventive, skillful, and ambitious. If this book is not a complete success, it is certainly not a failure, and we should all watch for her next shot.

STAR TREK: The New Voyages 2
edited by Sondra Marchak and
Myrna Culbreath
Bantam, \$1.95

Reviewed by F.L.A. Hood

AS MANY have said, the Golden Age of Science Fiction always seems to be the period when the speaker was a teenager and first discovered SF. Like thousands of others my age, I have a special fondness for *Star Trek*. It was *Star Trek* that first sparked that sense of wonder in me as *Forbidden Planet* did for many in the fifties and as *Star Wars* and *Close Encounters* have done for many youngsters today. But after 79 endlessly repeated hour episodes, 22 animated half-hour episodes, 4 original novels, 1 original anthology, and a number of how-*Star Trek*-was-made books, is there room for another original short story collection? Yes, I think, but not this one.

Why? All the stories are entertaining and, except for brief lapses, well-written; and it's always comforting to spend some time with characters that work and that we already know, but...

The chief problem might be called the absence of wonder. *Star Trek's* universe is incredibly rich in unexplored corners. What goes on at Kirk's off-mentioned Space Academy? What's it like to be an Andorian or Tellurite? None of these notions are explored. In fact, except for Jesco von Puttkamer's "The Sleeping God," even the scientific ideas are familiar to readers who know only *Star Trek* and not SF in general. Worse, the character facets explored in this volume are mostly the same ones revealed in the TV series, leading to a stultifying one-dimensionality.

In most of the stories, none of the characters are anything more than they were in the TV series. Kirk is the captain in love with ship and therefore crew. Spock is the scientific, logical Vulcan; McCoy the emotional, over-compassionate physician. None of the

minor characters is given more than the few lines they were left with in the series.

One turns eagerly to Nichelle Nichols's "Surprise!" Surely the actress who played her wants to tell us if Uhura is African as her Swahili name implies, or if her parents were simply proud of their heritage? Where did Uhura learn to sing? Does she have a love-life? Alas, we learn almost nothing about Uhura. The story is not even as although an alien "mother's little helper" is thrown in as a curiosity that in no way figures in the conflict in the story about a surprise party for Kirk.

"The Procrustean Petard" by the editors is an ambitious story unfortunately as unwieldy as its title (which the characters insist on bringing up again and again). The crew of the *Enterprise* and a Klingon ship find themselves victims of an automated planet that forcibly changes everybody's sex. An excellent idea to use in a setting such as the supposedly non-sexist Federation. Kirk however, seems the only one bothered, and his problems are A) every male in the galaxy lusts after him on sight; B) he's not strong enough to beat up a Klingon in hand-to-hand combat anymore; C) he feels like crying a lot. Kirk's true feelings as a woman are never explored because he never accepts that he is a woman. He is always James T. Kirk trapped in a woman's body. The idea deserves a better story.

Von Puttkamer's "Sleeping God" and Connie Faddis's "Snake Pit" make up for some of the deficiencies of the collection. Despite the glaring error that all the information on "one of the Federation's best-guarded secrets" is easily available in the ship's library, von Puttkamer manages to induce a sense of wonder with a rapid succession of alien devices and environments, all of which manage to figure in the plot. "Snake Pit" is a welcome exploration of Nurse Chapel's much-ignored character and includes that rarity in *Star Trek* fan fiction, a well-developed minor character.

Certainly not a poorly written bunch of tales, but you'll search in vain here for new *Hortas* and *Companions*, for new insights into Vulcan culture, for new alien crew members, or even for new civilized Federation cultures. It seems that the combined imagination of *Star Trek* fandom cannot match that of the one man who created the *Star Trek* universe, and therein lies the problem

with *Star Trek* fiction. Maybe the fans are so cautious about inventing something Gene Roddenberry will disagree with that they won't let their own imaginations go. Come on, fans, surely you have something to add to Roddenberry's universe.

THE HILLS OF FARAWAY

by Diana Waggoner
Atheneum, \$16.95

Reviewed by David Johns

AMONG THE boring things in life is the academic definition of a popular pleasure. Be it about sex, movies, or art, the wordy meretricious spouting of critics, academics, or researchers is the most effective antidote to insomnia since laudanum. In recent years Science Fiction and Fantasy have been victims of this incessant defining. Private and university presses have produced learned expositions tracing everything back to *Paradise Lost* and *Gilgamesh*, a testament-of-the-gods school of criticism.

Diana Waggoner, a student of library science, has written a book on fantasy for librarians. It is admittedly not a complete study of the field, but Ms. Waggoner has as much to say as any graduate student on her particular subject. She defines, categorizes, and outlines fantasy. Seminal writers and their works are described along with their influences on other writers who came later. If you're not familiar with the works of Charles Williams, George MacDonald, or E. Nesbit, then Ms. Waggoner gives you a brief introduction to them—and quite a few others.

There are two things that make the book interesting. One is a listing of over a thousand books that classify as fantasy. Not only are titles and authors listed, but the stories are briefly and often trenchantly outlined and evaluated. For this feature alone, librarians are likely to leap on the book like mice on limburger. The second thing is that Ms. Waggoner has a tongue as sharp as lightning and just as quick to strike towering reputations. You might not agree with her opinions, but it will certainly liven things up to have someone write that Lovecraft's fantasies are practically unreadable or that even at her best Andre Norton's "writing is hackneyed, mannered, and

full of moral pretentiousness." In summarizing books, Ms. Waggoner is just as likely to serve a cup of hemlock, calling Lin Carter's Thongor "a strong-thewed hero in a fur jockstrap" and H. Rider Haggard's *The People of the Mist*, "mindless melodrama."

What will be superfluous for some readers is the attention given to children's books: E. Nesbit, Ian Fleming, and the like. There is clearly an overabundance of stories about friendly ghosts, sensitive children, and garrulous animals.

In the end, this book, like all the other learned examinations of popular subjects, may be read and enjoyed for a short time but will pass away soon. The things it studies will go on and on, being read generation after generation, and who would have it any differently?

DEATH IN FLORENCE

by George Alec Effinger
Doubleday, \$6.95

Reviewed by Floyd Kemske

THE NEXT time you are at your local library flipping through the card catalogue in search of Thomas Mann's *Death in Venice*, you will come first to George Alec Effinger's *Death in Florence*. Depending on the size of your library, the two cards might be right next to each other. This placement does not necessarily bespeak a judgment by your librarian as to the literary comparability of the two books; nor does it indicate your librarian's inability to tell the difference between small books about older men who want to travel with young boys in ancient, grandiose Italian cities. No, the proximity of the two cards in the card catalogue is an accident of the alphabet. Effinger, on the other hand, is demanding that we compare the two books; otherwise, he would not have titled his book as he did.

Yet there is no basis for comparison. One book is a sensitive portrayal of emotional change in the life of an older man who is shocked to discover how little control he had over his own thoughts, desires, and even actions. It is a serious book. The other book is pure absurdity. In it, a megalomaniac convinces the inhabitants of southern Europe to give up their homes for the sake of a handful of misfits engaged in an experiment in non-wilderness camp-

ing. And as if that were not crazy enough, the author periodically pops into the narrative with items like: "STOP. Put your pencil down. Do not go on to Part Two until you are told to do so." He also administers occasional examinations for the reader and offers extra credit assignments. Be warned. I took the tests and I don't understand the book any better than I did before.

The novel is about Utopia 3, the brainchild of a Dr. Waters, who convinces the people of most of southern Europe that they should abandon their homes (going to live with relatives and such) for the sake of this experiment. Dr. Waters's campers go to live in the empty subcontinent to slowly develop good feelings about the experience and help bring peace to the world. The utopians behave the way a cynic might expect them to. They drive abandoned automobiles until they run out of gas (this seems to be what they do most). They eat a lot of Campbell's beans and franks from cans. Occasionally they get together and one of them violates the rules by becoming pregnant. In fact, the most constructive activity is undertaken by one who did not belong in the experiment at all but blundered into it. A pinball loser named Bo Staefler who travels with a young Arab boy attempts to convert the Piazza di San Marco into the world's largest miniature golf course, with obstacles made of priceless reliquaries, fonts, and sculptures.

Perhaps it doesn't sound at all like Thomas Mann. Then why is Effinger forcing us to compare the two novels? And if he doesn't want us to compare his book to *Death in Venice*, what does he want us to compare it to? The answer is that he wants us to compare it to "serious" literature in general.

The absurdity of the Utopia 3 idea is precisely Effinger's point in writing this book. If you will accept this one enormously inconceivable notion, then the rest of the book (barring the author's exams and instructions) seems eminently reasonable. The people behave consistently, natural laws are honored, and some characters even change in a believable manner during the course of the story. In this respect, the book is classically absurd. For the same reason, however, it is classically science fiction. Effinger is trying to force us to observe the similarity between the works of, say, Harlan Ellison and those of Eugene Ionesco. But you are far more likely to encounter Ionesco than Ellison in a freshman

literature course. Somehow, the designers of the world's freshman literature courses consider *Lonesome* to be more respectable than *Ellison*. In fact, the two are comparable in quality and *Ellinger*, by forcing us to recognize the basic similarity of *sf* and the absurd, shows they might also be comparable in intent.

THE ENCYCLOPEDIA OF SCIENCE FICTION AND FANTASY THROUGH 1968, VOLUME II: WHO'S WHO, M-Z
Compiled by Donald H. Tuck
Advent, \$25.00

Reviewed by David Johns

REFERENCE BOOKS can be divided into several types. There's the factual reference book, a la *Sines*, *Cosines*, and *Logarithms*, where the major concerns are if it's up to date, accurate, and complete. If anything's wrong with these kind of books, it's almost always a matter of incorrect facts. The other kind of reference book is a matter of opinion, where the unspoken question is always, "Is it fun to read?" Tuck's *Encyclopedia* is, of course, intended to be the former, but for most readers it will really be a lavish feast of delights to debate, quibble with, and discourse on.

It lists, factually, hundreds of writers of science fiction and fantasy, *M* to *Z*, prior to 1969 (but there is information of more recent date in many of the entries). There are short biographies running from three lines to half a page, lists of short stories and novels (with capsule descriptions), and, most striking for any collector, listings of first editions of books, not only in America and Great Britain, but in countries like Italy, Japan, Hungary, Argentina, Israel, and a host of others. Even the dates of magazine appearance are given.

Fledgling anthologists will give shrieks of delight at finding the complete contents of every single- and multiple-author collection. Ravenous collectors will be beggared by whole new horizons of unpossessed editions, and the bookreviewer in us all can find nits galore to pick.

In other words, if you're looking for a book that you will enjoy and read over and over, a book that is a collectible item in itself, and a book that is worth every cent it costs, then this is the book for you.

—G—

More From: Uncle Willy's SF Anecdote Notebook

[1] **The Thrill Book**—A Street and Smith publication began semi-monthly publication on 1/March/1919. It folded the same year with the 15/October issue. **The Thrill Book** was the first attempt to create a category Science-Fantasy magazine. It was conceived by publisher Ormand Smith and his editorial overseer William H. Ralston. Ralston hired Harold Hersy as editor and replaced him after eight issues with Ronald Oliphant.

Hersy, then an inexperienced editor, would later blame himself for the magazine's failure by not concentrating its story content exclusively in the Science-Fantasy area. **The Thrill Book** is today one of the rarest of the genre collectible magazines with individual issues commanding in excess of \$300.00 apiece!

[2] **Weird Tales**—Started in March/1923 as a Rural Publication, **Weird Tales** struggled through its first year with Edwin Baird as its editor. Its publisher, J.C. Henneberger, reorganized as Popular Fiction Publishing Company, appointing Farnsworth Wright as **Weird Tales'** new editor in November/1924. From this point through December/1939, Wright was to guide the world's first all fantasy magazine on through an unmatched "Golden Era" of great Fantasy and occasional Science Fiction.

Wright's failing health and Popular Fiction Publishing Company's shaky finances forced the sale of **Weird Tales** in 1939 to Short Stories, Inc. (publishers of the ubiquitous **Short Stories**). From 1940 until September/1954 **Weird Tales** was published by **Weird Tales** with Dorothy McIlwraith as its editor. The title was revived by publisher Leo Margulies in Summer/1973. Again **WT** was published by **Weird Tales** while Sam Moskowitz was its new editor. This revival lasted a brief four issues until Summer/1974.

—WHD

—G—

Best Sellers

HARDCOVER BESTSELLERS

1. **The White Dragon**
Anne McCaffrey: delRey
2. **Heir of Sea and Fire**
Patricia McKillip: Atheneum
3. **The Earth Book of Storming**
Paul Anderson: Putnam
4. **Dragonsinger**
Anne McCaffrey: Atheneum
5. **The Dark Design**
Philip Jose Farmer: Putnam

PAPERBACK BESTSELLERS

1. **Stormqueen!**
Marion Zimmer Bradley: DAW
2. **Dinosaur Planet**
Anne McCaffrey: delRey
3. **Splinter of the Mind's Eye**
Alan Dean Foster: delRey
4. **The Riddle-Master of Hed**
Patricia McKillip: delRey
5. **The Best of Jack Williamson**
Jack Williamson: delRey
6. **Well of Shinn**
C.J. Cherry: DAW
7. **Dragonflight**
Anne McCaffrey: delRey
8. **Hawkshill Station**
Robert Silverberg: Berkeley
9. **Godfire**
Cynthia Felice: Pocket
10. **Through the Eye of the Needle**
Hal Clement: delRey

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A Change of Hobbit, Los Angeles, CA; *Book Den on Rice Blvd*, Houston, TX; *Book Nook-Toe*, Manhattan, KS; *The Bookstore in Paoli*, Paoli, PA; *Cosmic Visions/New Media Distributors*, Silver Spring, MD; *Dark Carnival Bookstore*, Berkeley, CA; *Dave Turner Books*, Bellevue, WA; *Far Out Books*, Johnson City, NY; *The Harvard Coop* (Harvard Square) Cambridge, MA; *Mile High Comics*, Boulder, CO; *The Science Fiction Shop*, New York, NY.

(Compiled as of June, 1978)

Games

Marvin Kaye



CLOSE ENCOUNTERS OF THE THIRD KIND

Parker Brothers

STAR WARS "ESCAPE FROM DEATH STAR" GAME

Kenner Products

GAMES DERIVED from popular films rarely offer satisfactory play experiences. In order to secure a license and have the product ready when the film opens, manufacturers generally rush the production process so that there is frequently no time to design a game pattern that is interesting in its own right and which also captures the atmosphere and excitement of the original film. All too often, tie-in products are little more than Parchesi (i.e., "path" game) variants with cheap tokens that move around a track to the fated whim of a spinner. The principal relationship to the movie is generally the package graphics and the game board design.

But Parker Brothers and Kenner are to be commended for attempting somewhat better than average play concepts in their *Star Wars* and *Close Encounters* "titles." Although neither is the most memorable game I've ever seen, each is more imaginative than the usual run-of-the-mill movie tie-in.

Paradoxically, although the Parker Brothers item is the more intriguing of the two, Kenner's *Star Wars* is far more successful at achieving mimesis of the source film. Despite the presence of a spinner and a start-to-finish path, the game manages to capture some of the

fun and suspense of the *Death Star* escape in George Lucas's film.

The object is to move two independent tokens (Han/Chewbacca and Luke/Leia) from start (the trash compactor) to finish (rebel base). Players spin and decide which piece to move along a choice of paths, some riskier than others. A piece may land on a blue "Force" circle; if the Force is with him, he may advance, but if it is against him, the affected token may be sent back toward the trash compactor, or possibly jailed for a time in the Detention Block square. Each player must complete two missions: land in the distant squares representing the control room (to "get blueprints") and the tractor beam (to shut it off and free Han's ship, the *Millennium Falcon*, as does Alec Guinness in the movie). Once both missions are accomplished, the player races his tokens to the board space representing the *Falcon*, where they jointly fly to the rebel base, either by moving slowly through neutral "hyperspace" or by engaging enemy spaceships (Imperial TIE Fighters). In game terms, the latter course means tokens land on an enemy ship's space and wait for a twirl of the spinner to determine the battle's outcome. If luck (or the Force?) is with the players, the rebel base may be reached via these dogfights in one protracted turn.

Despite the spinner, there is some opportunity for skilled play in this game. *Star Wars* will be most appreciated by young players, but parents who challenge their offspring to a match will discover winning is not quite so easy as it appears. Choices must be made

constantly, and risking the Force becomes increasingly foolhardy as the contest proceeds. Yet it may be the only way to counter an opponent with a strong streak of good luck.

Star Wars is designed for two to four players, though an imaginative youngster will enjoy it solitary. An average game takes fifteen minutes, longer when more people play. Components include the board; eight playing tokens (thick paper secured by cheap plastic bases); a rather flimsy spinner, and a deck of Force cards, "blueprints" and tractor beam cards. Workmanship is adequate, but not impressive. Game prices fluctuate vastly, and a Target Store in the Midwest may sell *Star Wars* far cheaper than in Manhattan, where it averages \$8.50 per game, a price I consider too steep for the genuine, though modest play value of this product.

It is perhaps understandable that Parker Brothers could not achieve a satisfactory mimesis of *Close Encounters of the Third Kind*. The comic-book adventure level of *Star Wars* is simple to approach, but Steven Spielberg's poetic mysticism is far more evanescent and, ultimately, too elusive to be captured in the kind of board game being marketed under the film's name.

In spite of an eye-catching box and handsomely designed board—complete with the silhouette of Devil's Tower, Wyoming, beneath the numbered grid—, the *Close Encounters* game might as easily have been named *Land Mine* and manufactured with a World War II set of graphics on the cover. Supposedly, each player attempts to be

Games

the sole player to board the "Mother Ship," which may only be achieved by "sounding" the mysterious five-note melody that serves as the alien's leitmotif in the film.

But the actual play pattern is an ingenious variation on the old pencil-and-paper sport, "Salvo" (also known as "Battleships"). On a grid of nearly 150 squares, players (from two to four) secretly mark traps for the other players. Dice are thrown, and one's token may be moved in any pattern over the squares, shuttling from one terminal to another (named Devil's Tower and Mother Ship). If a token passes through another player's trap, that contestant immediately announces the fact; the trapped token must return to the last terminal it touched, and the owner of the trap places a poker chip on the board at that site. Each time one reaches a terminal without being trapped, the privilege is gained of creating a new trap for the others.

The first player to place five poker chips on the board wins. Since more than one contestant may secretly select the same square, if a third player lands on it, it is conceivable that two persons could both win.

This game is more appealing to maturer players than its science-fictional cousin from Kenner. An average game may last nearly an hour, less if the players are unevenly matched or if more than two participate. The above description may lead one to believe there is considerable luck involved in winning, but the game requires intuition, a penchant for deduction, and an excellent memory to play intelligently. Laying traps effectively depends on adequately reading one's opponent's probability pattern, while in three- and four-player competitions, one must recall the safe squares on which other pieces landed when travelling in the same direction. Luck actually accounts for a minimal slice of the chance vs. skill ratio in *Close Encounters of the Third Kind*.

Components include the game board, a set of dice, four secret marking grids with crayons, four plastic playing pieces shaped like the Devil's Tower, and 20 small poker-type chips. Workmanship is superior and the game concept almost justifies the \$8 charged in many Eastern stores. However, one New York department store is charging \$10 per game for this product. Considering that *Close Encounters* could be played with pencil and paper, this is an exorbitant charge.

Marvin Kaye

Back Issues



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California And Babylon

Gregory Benford

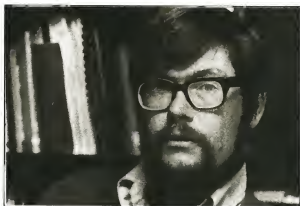


Photo credit: James Benford

AS SUMMER drifted into fall of 1977, California lay brown and dusty under a yellow sun. The drought brought memories of earlier dry years in California, but what few have anticipated is that this year may well have been a vision of the future as well.

Due to an interstate treaty skillfully negotiated in the 1930s, California has enjoyed the lion's share of the Colorado River. Within a decade, though, this water prosperity must end. The treaty will be renegotiated. What's more, the other western states are getting stingy about their water rights in unexpected ways. Recently Nevada threatened to sue California if California carried through with a cloud seeding program. Nevada argued that increasing rainfall in the California valleys necessarily meant Nevada got less rainfall from those same eastward-drifting clouds.

All these are signs of the future. Southern California is a monumental engineering project, notably lacking in backup systems. Los Angeles is the largest city ever built in a semi-desert. Keeping Los Angeles afloat in water became a major political football in the 1920s and '30s—witness the film *Chinatown*, a seamy look at the water issue. Of course, none of this is new—which is precisely why we can get some plausible ideas of what will come next.

Mesopotamia was remarkably similar to Southern California when the first irrigation-based cities sprang up there. Diverting water of the Tigris-Euphrates rivers into farms gradually led to a build-up of salt in the soil, because salts

which gradually accumulated in the rivers as they flowed oceanward were spread out into the rich soil of the valleys. After thousands of years the soil became miserly with its crops. Stepping up the irrigation rate merely worsened matters. Today most of the ancient seats of this civilization are arid, salty deserts. Babylon is no more.

Now, most earth scientists I have talked to don't think California will be that badly off for quite a while—a century or so, say. But our irrigation is so much more widespread than the ancient systems—providing much more water per person—that the outcome isn't obvious.

There's a further complication, particular to California. Local water districts get some of their water by pumping on local wells. This would have depleted the ground water in the Los Angeles basin long ago if the state water agency didn't pump incoming Colorado water into the aquifer. Slowly, however, the battle is being lost: sea water is flowing into the aquifer along the coast. Already this salt water is changing some of the coastline vegetation. In a drought, this problem could become widespread and fatal to much plant life. It is already an ever-present threat.

Of course, salt build-up from the Colorado River or the sea probably won't be important for the next few decades, at least, but it is a useful road sign, pointing at one inescapable fact: California, like most of the western states, is a delicately balanced ecological system which has never supported large populations. Importing water from

other areas brings different soils into contact with each other and disturbs the balance of salinity, which can cause erosion of topsoil and loss of greenery. So far California has managed to look like a garden by using lots of water. But how will it seem in a few decades, when there isn't so much water, or the energy to pump it?

Consider Orange County, where I live; it is the fastest growing county in the United States. At the core of the county's prosperity is the cheap, easy transportation—a lacing of convenient freeways. What will happen when gasoline isn't cheap?

First, people will live near their work. They'll have to. Some social theorists believe this simple fact alone will give us better, prettier surroundings. Why? Because studies have shown people who live and work in a neighborhood take better care of it, look after foliage, and generally make a better community.

Southern California is an extreme example of what the United States as a whole faces as energy runs out. Water and energy are intertwined in California: the biggest single user of electricity in the state is the water pumping system. Keeping those suburbs flowering will be a major task, sopping up money ordinarily used for education, roadbuilding, and bureaucrats.

Can California deal with this ongoing, steadily mounting crisis? Perhaps—it is, after all, the genuine seat of innovation in America, the source of fads, fashions, and political gurus. But maintaining the immense techno-ecosystem that is California will demand flexibility.

Take the suburbs. In California, they carry all the real political clout. How can they endure in anything resembling their present form?

I think the solution to the energy crisis lies in a communications revolution. The freeway, as an institution, rests on the (assumed) need for rapid, easy access to many different people and places.

In 1970 I wrote an article propounding a new "law" for the future: *It is always easier to move electrons than people*. That is, as our energy supplies shrink, communication will replace transportation.

Our persistent need to see each other personally is rooted in all sorts of social patterns. We don't trust anyone fully unless we've had a chance to size him up, get the measure of his response, watch how his eyes move when we ask him a particularly pointed question.

You can't do that by telephone. But you can with a television hookup added. Add a computer readout for transferring complex information and you have everything necessary for effective business and maybe even personal communication.

In the later 1960s the insiders' gadget was the pocket calculator. Now they're dirt cheap. In about 20 years the insiders' gadget will be computer-communicators, carried on the hip or in a handbag. Let's call it a "manservant"—because that's how extensive its services will be.

The manservant will act as a storehouse of information, with instant retrieval. It will have a speaker and transmitter, replacing in many cases the telephone. Its minicomputer will keep tabs on your bank records, utility consumption, overdue library books and appointment calendars. It will pay bills, remind you of TV shows you wanted to catch, and take messages from callers when you don't want to be disturbed. The postal service—an energy inefficient enterprise at best—will wither.

The suburbs will see many more people working at home, using their manservants and other comm gear to transact business. They'll live in houses with fretted masonry, to permit air circulation—the only kind of air conditioning left. Thick walls, dirt-filled, will keep out the day's heat and the nightly chill. Solar units controlled by the manservant will cycle through the day, storing hot water for heating.

So the answer to the demise of the personal auto may well be the pro-

liferation of complex electronics. Swift, accurate communication will be far cheaper than gas-guzzlers. Your telephone bill keeps rising, granted—but it's still far less than the 20% of income an average American spends on his car.

Every new piece of technology brings its disadvantages, of course. The all-seeing manservant can invade your privacy. And a new class of thieves is already in the making—people who steal expensive computer time. Recently a man was sentenced for a seemingly microscopic crime—he stole the "round-off error" in bank accounts. Every time a bank computes the interest due on a savings account, if the sum due comes to, say, \$50.3743, the computer rounds it off to \$50.37. The thief changed the bank's accounting program to transfer the 0.0043 cents to his account rather than forgetting that microscopic leftover. It was a large bank; he was making thousands of dollars a month. We can expect even more ingenious tricks to come.

So far this future California looks pleasant, perhaps even a little boring. Not as much traffic, less hassle. But pollution of air, water, and food will probably be worse than today. Burning of coal will cloud the air. Oil-based antipest chemicals will be uncommon, but their replacements will be no less dangerous. The increasing use of carcinogenic substances—which has been going on for at least 50 years already—will persist.

There's a relatively obscure disease—lupus erythematosus—that has already grown from a rare illness to a major killer. Lupus will probably rank right behind cancer itself by 2000, because it seems to be linked to the general presence of irritants in man's environment.

Around the year 2000 other debts will come due. The expansion of Los Angeles now leaves behind decaying, poorly-built suburbs. In 20 years these could well become unlivable. Much of the best land in California could become a vast rundown slum. And there would be little public capital around to rebuild it.

The sun and surf that drew legions to California are also a hidden problem for the state. Southern California is an outdoor community. That, plus television—another industry California dominates—are subtle inducements to read less, think less, feel more.

Societies in warm, ocean-bordered environments tend historically to stul-

tify. People relax. The old habits they learned in more bracing climes begin to slip away. Comfort becomes more important than before. The west coast of Italy followed precisely that pattern when Rome was at the height of its power.

Will that happen to California? Well, the west coast is not an isolated test tube experiment, and historical analogies are tricky. Then too, it's always easier to spot problems than to provide answers.

Here I've pointed out a few harbingers of unique problems for California—problems requiring skills and flexibility. Can this rich state respond? Only if we recognize our future for what it is—a new world, with new problems, demanding freshness and originality. If California can't solve these riddles, given all its wealth and resources, does anyone expect other regions and societies to do any better with theirs?

—G—

HOGAN

[Continued from page 20]

together.

In the meantime there must be scores of themes in all this that are ripe for sf. How do you stimulate brain centers remotely? How do you extract concepts from the mind? How would that mind interact with tomorrow's computers and what forms would those computers take? What would it feel like to integrate one's thoughts with a machine of such capacity, or to fuse them into the perceptions and experiences of a person thousands of miles away? What kind of society would result from such capabilities? How would political, sectarian, religious and personal differences be resolved if each side could see the situation through the other's emotion-tinted glasses? Picture a planet that modifies itself to reflect the needs and desires of its population. And so on.

There is ample material around for building plausible pictures of how tomorrow's people will communicate with tomorrow's machines. But paper tape in starships? Never, never, never! There's certainly no excuse for not doing better than that.

—G—

Inquisition

Letters

that the signal-to-noise ratio in the "brains" of completely unlike organisms introduces even more complexity when telepathy is considered in the case (3) that Dr. Leibler refers to. The noise, of course, would refer to ongoing neural activity unrelated to mentation, such as autonomic nervous system activity or the neural activity related to mastication, respiration, etc. in humans. For that matter, how about the noise that could be generated from mentation that is not directed specifically toward an attempt to communicate, such as the organism's ongoing opinion of himself, how the attempt at communication is going, how it subjectively views the other creature, etc. Ever tried to make conceptual sense out of an electroencephalogram? The best that the authorities can do is apparently to classify EEG activity into useful diagnostic and activity types, correlate it grossly with the "Rapid Eye Movement" stage of sleep, etc. or evoke specific activity that is related to perception of a sound, sight, etc.

R. Don Brown
Shreveport, LA

Dear Editor,

Since articles, especially speculative ones, are far more interesting than stories, I read Justin Leibler's "Extraterrestrial Translation" immediately. The article has much to ponder, not the least of which is the startling footnote about "the normal mode of real science."

In my opinion and, I think, echoed by traditional scientists, Justin has gone a little overboard. Perhaps with some qualifications and limitations, his statement in the footnote might be more true than not; but, as it stands, I won't accept his concept. It is the sort of thing which leads to all sorts of "crackpot" ideas where the idea comes first and the facts (or simulated facts) are selected to bolster the idea. Thus, Von Daniken and the like.

If Justin is simply saying that there is an adjustment between points on a graph and the curve which fits a "nice" formula, I have no argument. Nature does seem to operate with elegant equations whereas individual observations behave more like the rolling of a pair of dice for close approximations. And so, I guess, what I'm asking is Justin to amplify his footnote.

While he's at it, could he explain why a plosive like "p" makes no objective

vibration? If you say the part of the word crucial to my point, *pl* and *sp* (leaving off the "t"), in front of a match flame, the match flame is extinguished by the plosive "p"; it stays lit with "sp." Perhaps it's only midwesterners who pop the lips to say "p"... That small popping sound, it seems to me, must have some objective vibration; it certainly is not silent as Justin says.

All in good fun... Galileo has a fine format and bodes well for its future.

Donn Brazier
St. Louis, MO

Author's reply:

The footnote about making "the facts fit the theory" was a footnote to the second paragraph of my article. It is unfortunate that it appeared at the end of the article because that gave it greater emphasis than I intended. What I wanted to disparage is the view that science consists of collecting a lot of observational and experimental data, then finding a theory that gives a compact summary of the data (assuming that it covers similar material). If you read Thomas Kuhn's book, The Structure of Scientific Revolutions, you will find a convincing case for the view that sciences become real sciences (as opposed to natural history, random fact collection) by ignoring a lot of data and extending the powerful but narrow theory that has kicked that particular science into the big leagues.

Consider Newton's first law of motion, which really put physics into big league science, along with his other laws: a body unimpeded by an external force proceeds at a uniform state of motion or rest (inertia). But every body in the universe is being influenced by some external force (such as gravity). And Newton certainly knew that any object he could observe was being influenced by gravity. So Newton was describing a situation which he had never observed and knew he could never produce experimentally! Similarly, Galileo held that all bodies fall at the same rate of acceleration (in the same gravitational field), and the following "thought experiment" did much to convince him: suppose a sphere is falling and that it is magically split down the middle—isn't it natural to think that the split will have no effect so far as the speed is concerned? But Galileo never observed this and, if you think about it, he had no way to produce the situation experimentally. In fact,

Letters

DEAR MR. RYAN,
I would first like to congratulate you on the quality of your magazine issues to date. I would also like to express my appreciation of Dr. Justin Leibler's thought provoking article on "Extraterrestrial Translation" (Issue Number Seven).

However, I would like to point out to your readers that the part of his footnote relating to Newton fudging his observational results should not be misconstrued to mean that scientists who feel they are right either do this or have the right to do it. As a scientist (pharmacologist), I can assure the readers that the lack of correlation between an hypothesis and the results obtained from an experiment that is designed to test that hypothesis can be interpreted in only one of two ways, either the hypothesis is wrong or the experiment was not properly designed to test that hypothesis; i.e., variables were present that either were not controlled properly or were not allowed for in the experimental design. (The latter was probably true in the case of Newton fudging observational results.) Only the accumulation of sufficient observational results obtained from properly designed experiments (evidence) can answer the question of whether a theory is correct. Even then, a particular line of evidence can and sometimes does agree with more than one theory. Blood, sweat and tears are usually responsible for major discoveries, serendipity is not. No one, including Newton, had or has an inherent right to fudge observation results.

I might also point out, in conclusion,

humdrum observation of the comparative falling rate of, say, a cannon ball and a parachute suggests that Aristotle was closer to the gross observation data when he held that large, light bodies fall more slowly than small, heavy ones. Aristotle's work hampered the development of physics, while that of Galileo and Newton put it on the road to real science, on the road of powerful, abstract, and systematic theory. Von Däniken's "theories," to the contrary, are not powerful, abstract, or systematic—they aren't theories at all, anymore than a belief in "things that go bump in the night." What he puts forward are claims that particular pre-historic events occurred. He doesn't provide an alternative physics or astronomy, an alternative theory. And the evidence he provides for his claim that these events occurred is flimsy and incoherent.

As to the plosive "p" of silence in "split," as opposed to "slit": 1) When you say "split" in the normal way, your lips do come together momentarily, which they don't do when you say "slit": that's one reason why we all feel that we hear a "p" vibration. 2) However, if you make an acoustical graph of audible vibrations, the only difference between the "slit" and "split" graphs is the size of the blank space (a matter of a few hundredths of a second) between the "s" sound and the "t" sound; indeed, all you have to do to make "split" into "slit" is to snip out some blank (soundless) tape. 3) If you screw up your face unnaturally and explode with a "s-PP-lit" as if you were trying to blow a pea across the room, you will hear a non-silent "PP." But that, as I tell my purse-tipped friends while cleaning up the spit, is not ordinary English.

Justin Leibler

Our sincere appreciation to all those people who have taken the time to write us. Space is dear, as sf readers know, but inner space is dearest of all. If we don't run your letter, please be assured we read every word.

—The Staff.



Telescope

Our future

Q: In general terms, how accurate are most science fiction works from a scientific point of view?

A: Not very accurate. In fact, most science fiction is quite shoddy. If you really mean science, or how science is done, then there is very little 'good' science fiction. . .

—Gregory Benford, *A Scientist Looks At Science Fiction* by Jeffrey Elliot

"What do you understand, Martha? I'm stuck into this man's body, half of me left behind, and you expect me to be the same! People do change, you know, even when they're alive. I know who I am. Who are you. . .

—*The Incredible Living Man* by John Kessel

Under control of Asimov's law, the robot began to appear as a friendly, clumsy genius—usually quite adorable. Typical is the popularity of *Star Wars* R2D2 and C3PO, a mechanical reincarnation of Abbott and Costello.

—*Intelligent Computers Within 10 Years* by Robert Gonsalves.

This was, after all, the first zombie I'd ever run into in the alleged flesh. Not only that, it wasn't behaving anything like I'd been late-show-lead to believe was typical zombie fashion. This thing was definitely interested in the world around him, not to mention being somewhat ticked off. . .

—*The Midnight Bicyclist* by Gene DeWeese & Joe L. Hensley

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Star Chamber

L. Sprague deCamp



SPRAGUE DE CAMP has a career battling average of two books per year. The author or co-author of approximately 80 books, he would probably have written more if he had not taken the time to write over 350 articles and stories and about 75 radio scripts. In fact, it takes fifteen pages of single-spaced typing to list his publications. At least it did when the most recent listing was compiled. That was a few months ago and it probably takes sixteen pages by now.

The fans who attended the deCamps' session (his wife, Catherine Cook deCamp, is also a professional writer) at the World Science Fiction Convention in Miami were astounded to learn how much effort goes into running a writing business. Professionalism goes beyond the mere writing into bookkeeping, market research, and record-keeping. Most of the "secrets" of successful science fiction writing can be found in deCamp's *The Science Fiction Handbook* (McGraw-Hill issued a revised edition in 1977). The biggest secret of successful writing comes not from the *Handbook*, definitive though it is, but from deCamp's personal life. He rises habitually at six and consistently works a sixty- to seventy-hour week.

We know him, of course, as one of the great science fiction and fantasy writers. But the work of this literary dynamo encompasses non-fiction, juveniles, and historical fiction, as well as science fiction and fantasy. His recent novel, *The House of Zlr*, was published by Putnam in 1977.

—G—





King of the DREGS rules from his throne